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The Hunterian Lectures
ON
THE PYGMY AND NEGRO RACES OF AFRICA.

Delivered before the Royal College of Surgeons of England on March 2nd, 4th, and 6th, 1908,

BY F. C. SHRUBSALL, M.A., M.D. CANTAB., M.R.C.P. LOND., M.R.C.S. ENG.,
RESIDENT OFFICER OF THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON, LONDON, S.W.

LECTURE I.

Delivered on March 2nd.

MR. PRESIDENT AND GENTLEMEN,—The continent of Africa may be divided from the ethnic standpoint into two distinct sections—a northern, inhabited by white races; and a southern, inhabited by negroes and pygmies. The line of separation lies nearly along the tenth parallel of north latitude save for an extension northward of the negro zone in the Nile valley and southwards of races with a large white element to the equator along the borders of the Red Sea and the Indian Ocean. While there are abundant materials for the reconstruction of the early history of the northern section and especially of the Nile valley, little or nothing is known of the southern area until the date of the first European explorations.

From the paintings and sculptures in the various tombs and temples in the Nile valley it is clear that the Egyptians were well acquainted with the negro tribes of the Soudan. The Egyptians had a definite and constant communication both by sea and overland with the "Land of Punt," which probably embraced the modern Abyssinia and Somaliland, and had some idea of the geographical features of these districts.

Since the sculpture on the tombs of Ti and Ptahhotep, referred to the fifth dynasty and an estimated date of 3300 B.C., represent pygmy forms undoubtedly in some measure resembling the races now found in equatorial Africa, they must have been acquainted with their existence on the upper waters of the White Nile. Inscriptions of this period state that beyond Puanit (? Punt) the land was occupied by the Dangas, a tribe of half savage dwarfs. The word Danga still occurs in modern maps denoting a point on the borders of Darfur and Niam Niam. From somewhere in this region a pygmy was sent to King Assi (3300 B.C.) by one of his officers. Keane, quoting Schiparelli, shows that some 70 years later Pepi II. of the sixth dynasty sent an officer "to bring back a pygmy alive and in good health" from the land of great trees away to the south.

Karl Peters has suggested that the Egyptians may have penetrated as far as South Africa, on the basis of a statuette bearing the cartouche of Thotmes III. (1450 B.C.) found in Southern Rhodesia. It is, however, more likely that the statuette was dropped there by chance in recent years and it is by no means certain that it is of genuine ancient Egyptian origin. About 600 B.C. Neku, the son of Psametik I. of the twenty-sixth dynasty, sent an expedition of Phœnicians to sail down the Red Sea and along the coast to the land of Punt. According to tradition recorded by Herodotus, this expedition circumnavigated Africa, reaching the Mediterranean by the Straits of Gibraltar. That author records that the expedition was actually ordered to leave the Red Sea and to return by the Pillars of Hercules. He also states that the expedition took three years during which from time to time they landed, sowed corn, and having reaped the crop resumed their journey. While sailing round Libya they had the sun on their right hand, which is the strongest confirmatory evidence of the truth of the narrative. About this period the Phœnicians from Carthage had founded settlements along the Western Mediterranean and the Atlantic coast of North Africa. About 520 B.C. occurred the celebrated expedition of Hanno who, having revictualled the Carthaginian colonies on the western coast of Morocco, founded a fresh settlement on Kerne Island in the Rio del Oro inlet and then proceeded south past the Senegal and Cape Verde. Sir H. H. Johnston concludes that this expedition reached Sherbro Island at the western border of Liberia; others conclude that its termination was the mouth of the Ogowé river. On the island at the end of their journey the travellers captured wild hairy men. The name given to these in the Greek translation from the Punic was "gorilla."

In the fourth book of Herodotus there is an account of an expedition made somewhat later by Sataspes who was ordered to circumnavigate Africa. He passed Cape Soloecis and journeyed south for many months until he said his ship refused to travel farther. At the farthest point he reached the coastlands are described as occupied by a dwarfish race who wore a dress made from the palm-tree. These people, whenever the expedition landed, abandoned their homes and fled away inland, although the men did them no harm and only entered their cities and took some of their cattle. As confirmatory evidence it may be noted that after passing the equator the winds and currents would have been against this expedition while favouring the passage from south to north. The mention of a dress made of vegetable fabric agrees with the modern description of the peoples on the west coast north of the Ogowé river.

Herodotus himself visited Egypt (*circa* 457 B.C.) and journeyed up the Nile as far as the first cataract. He learnt that there was a great city of the Ethiopians in the bend of the Nile at Meroe, but beyond that nothing certain was known. In Book III. he, however, records that Clearchus, king of the Ammonians, gave information imparted to himself by certain Nasomonians, a Libyan race who occupy the Syrtis. Certain of their young men crossed the Libyan desert from east to west. After journeying many days over a wide extent of sand they came at last to a plain where they observed trees growing. While engaged in gathering fruit there came upon them dwarfish men under the middle height who seized them and carried them off. They were led across extensive marshes and finally came to a town where all the men were of the height of their conductors and black complexioned. A great river flowed by the town running from west to east and containing crocodiles. This river is usually identified as the Niger, but Professor Elliott Smith in his notes on African pygmies suggests the Sobat, in which case the town must have been in a bend of the river as its main course is east to west. The important feature is that the pygmies are once more brought to notice in Central Africa and at a point far to the north of their present geographical distribution. The Greek geographer Eratosthenes sketched the course of the Nile and its Abyssinian affluents and hints at the source of the river from great lakes. Roman expeditions explored the Nile as far as the marshes above Fashoda, coming in contact with the negroes of this district and also reached the country around Lake Chad, which they found to abound with rhinoceroses.

The first clear map of the district is given by Claudius Ptolemaeus (so-called Ptolemy) 150 A.D. He quotes in full an account given by Marinus of Tyre of the journey of a Greek merchant Diogenes. This man is said to have landed at Rhaptum on the East African coast, to have travelled inland for 25 days' journey, and to have arrived in the vicinity of the two great lakes and the snowy range of mountains whence the Nile draws its twin sources. It is probable that he got his information from Arabs. He says that the mountains were named from their brilliance the "Mountains of the Moon." He was told that the Nile united its twin head streams at a point to the north of these two great lakes and then flowed through marshes until it joined the river of Abyssinia. Ptolemy's map places the mountains actually in Unyamwezi, which is erroneous. As Unyamwezi means "land of the moon" it is possible that this name was transferred to the mountains seen after passing through that country. From this time on knowledge of Central Africa gradually dwindles, though after the Arab invasions some rumours of the existence of the lake country reached mediæval Europe. The former accounts were disputed and disbelieved for over 1700 years until confirmed by the discoveries of Sir Henry Stanley.

The exploration of the Eastern coasts of Africa was carried on by the Arabs and Persians who established settlements there during the tenth century of our era. In the great work of the Arabian traveller El-Macoudi, completed A.D. 943, a description of the coast and natives is given. El-Macoudi refers to the negroes or Zendj as inhabiting the land as far south as the country of Sofala where they bordered on the Wak Wak or Bushmen. The Zendj were under a paramount ruler with the title of Waklimi. Among them were some with sharpened teeth who were cannibals. They used the ox

as their beast of burden, for riding purposes, and for war. They were unacquainted with camels, horses, and mules. They had no religious creed. Their food was millet, honey, and the flesh of animals. The Mahomedans carried on traffic with them for ivory, gold, and skins. Wild elephants were numerous and were killed with darts. In 1330 a description of the same districts was given by Ibn Batuta, a native of Tangier. From a little before this time there is in the Chronicle of the Rulers of Kilwa a fairly complete history of this part of the coast of Africa. In 1498 Vasco da Gama begins the European history of the district.

There is a break in the historical knowledge of the western side of Central Africa from the second to the fourteenth centuries, when Norman adventurers sailed past the Canary Archipelago and Cape Verde to the land of the blacks. The Genoese appear to have had some knowledge of the coast as far as the Bight of Biafra, if we can judge from a map dated 1351 in the Medician library at Florence and published by the Hakluyt Society. This map also gives some of the results of the exploration of the Central Soudan by the Arabs, for the upper course of the Niger is delineated and there is an outline of Lake Chad. In the fifteenth century the Portuguese pushed forward several expeditions. De Sintra reached the Liberian coast and gives a description of the natives who came off in canoes, "quite naked," carrying pointed spears, darts, javelins, bows, and here and there a shield of leather. Their ears and noses were pierced and their teeth were sharpened to a point. One of the natives was brought back to Lisbon. In 1484 Diago Cam reached the mouth of the Congo, and the next year Cape Cross.

The first recorded contact of Europeans with the short-statured tribes of South Africa was in 1486 when Bartholomew Dias having passed the Cape landed in Mossel Bay. The inhabitants, astonished at the apparition coming over the sea, fled inland and all that was learnt was that they had numerous droves of domestic cattle. In 1497 Vasco da Gama landed at St. Helena Bay and met with a party of natives, short in stature, ill favoured in countenance, and dark in colour. They used many gestures in speaking, their dress was a kaross of skin, and their food wild roots and seals and whales washed ashore by the tide. They had no domestic animal but the ox. Their weapons were shafts of wood pointed with bone or horn. This description would apply to either beachranging Hottentots or Bushmen but the weapons are those associated with the former. In the same year at Mossel Bay da Gama met a number of Hottentots riding on pack oxen and also possessing sheep. In 1510 Don Francisco d'Almeida and a party landed at Table Bay and were involved in a quarrel with the Hottentots. An expedition of 150 men was landed and attacked the kraal. The Hottentots, 170 in number, replied with stones and fire-hardened wooden assegais, using their riding cattle as shields. The Portuguese were utterly defeated, 65 being killed, including the retiring Viceroy of India. Thenceforward there is an ample written history of South Africa. It was not until some time after the Dutch occupation that it was realised that there were at least two peoples in the country who waged bitter war on one another, the Bushmen and the Hottentots.

In 1625 Purchas published the first modern account of the dwarf races of tropical Africa in "The Strange Adventures of Andrew Battell of Leigh in Essex, sent by the Portugals, prisoner to Angola, who lived there and in the adjoining regions near 18 years (1589–1607)." Battell said:—

> To the north-east of the Mani-Kesock are a kind of little people called Matimbas; which are no bigger than Boyes of twelve yeares old, but very thicke, and live only upon flesh, which they kill in the woods with their bows and darts. They pay tribute to Mani Kesock, and bring all their elephants' teeth and tayles to him. They will not enter into any of the Maramba's houses, nor will they suffer any to come where they dwell. And if by chance any Maramba or people of Longo pass where they dwell, they will forsake that place and go to another. The women carry Bows and Arrows as well as the men. And one of these will walk in the woods alone and kill the Pongos with their poisoned arrows.

Battell's statements have been confirmed by du Chaillu and others and there is now abundant evidence of the existence of short tribes in the Ogowe and Camma districts.

The verification of the statements of early authors as to pygmy tribes in Central Africa was made by Schweinurth in the Niam Niam country, subsequently by Emin Pasha, Stanley, Junker, and a host of others. Further south Wolf and Wissman proved their existence in the forests of the Kassai. Two distinct groups of the shorter peoples are now recognised, the Bushmen Hottentots of the Cape and the Negrillos of the Central African forests. These must be considered separately.

The Cape Bushmen are usually described as of a yellowish brown colour, short statured, with slightly broad heads, short black hair tightly twisted into small rolls or peppercorns. They possess little or no beard, nose broad and without prominence of the bridge, cheek bones projecting. Their jaws are usually said to be very protuberant, but this is relative and not actual, the appearance resulting from the flatness of the nose. The forehead is often bulging and the face straight. The coronoid process of the lower jaw is short and the sigmoid process is shallow. The stomach is protuberant and the back is exceedingly hollow. In spite of this great lordosis the lumbar vertebræ mounted alone without intervertebral discs actually curve forwards in a C curve, the posterior height of the centre of the lumbar vertebræ exceeding the anterior height. They must, therefore, be placed in the koilorachic division of Turner with the other pygmy peoples, the negroes and Australian aborigines. They are said to have greater powers than the average of twisting their bolas and to practise sitting down and shooting poisoned arrows at one another. The Bushmen, who have now disappeared from the Cape, were all nomadic hunters, whose weapons were the bow and poisoned arrow. Their habitations were caverns, rock-shelters, or merely mats spread over branches. In conditions of extreme poverty they often used only a screen of branches. They slept coiled up. Their only domestic animal was the dog. They wore little clothing and adorned themselves with necklets of beads made from the shells of ostrich eggs. They used rough stone implements and a characteristic rounded and perforated spherical stone into which was inserted a pointed stick used for digging purposes. They are described as having a very slight social organisation, but it must be remembered that they had been hunted outlaws for years before any investigations into their customs were seriously undertaken. Being only hunters they suffered very severely when their hunting grounds were occupied from the east by the Hottentots, from the west by the Bantu, and from the south by the Europeans. As the game was gradually driven away they were forced to make raids on the herds which took their place, and from the reprisals thus provoked were driven from being a quiet friendly folk to become marauders whose hand was against every man. No serious attempt was ever made by the successive governing bodies at the Cape to settle this people and those who had been gradually accustomed to a pastoral life by missionary efforts were constantly displaced as the farmers spread up country and forced to resume their old habits. The Bushmen developed singularly artistic taste and produced rock sculptures and paintings of a higher type than the taller tribes which recall the works of the early Stone Age in the Dordogne.

It seems probable that there were two classes of Bushmen, those of the plains and those of the mountains. The former were known as the Kraal Bushmen and so called because they built a sort of low round cairn in which they slept on the plain, never going into the fastnesses of the mountain, and Peringuey of the Cape Town Museum points out that it is this type of Bushman that still survives in the Kalahari. He shows that it is probable that the term Bushman comprises many unknown quantities and that it is certain that the Bush people of the central part of the colony did not understand the language of those to the North-east. This might, however, be explained by the conditions of life favouring the production of linguistic diversity.

Andersen[1] distinguishes four types of Bushmen in the Kalahari—the Cape Bushmen, some who are not racially Bushmen at all but Bantu people forced to adopt the Bushman mode of life, others are probably half-castes, and in addition he describes a lower type than has been met elsewhere. He says:—

> At Narukus, on the Nossop river, I came upon a family of Bushmen, ten in number, of a different type to those I had in my service and evidently of a lower class. They have no forehead; the wool on their heads comes close down to their eyes; projecting mouth; small nose; a sort of hair or wool all over the chest, arms, and legs; their eyes are small and restless. The tallest man did not exceed 4 feet 4 inches. Their skin was of a reddish-brown. A few old skins, broken ostrich eggs, and bows and arrows seemed all they possessed of worldly goods. All were destitute of clothing.

His Bushmen attendants repudiated the idea that they were of the same race as these newcomers, who, they said, were

[1] Twenty-five Years in a Waggon.

monkeys and not men. They added that these were few in number, rarely seen and ate carrion.

Somewhat varying accounts have been given of the stature of the Bushmen, as is shown in the following table:—

TABLE I.—*The Statures of Bushmen as given by Various Authorities.*

Observer.	Male.		Female.	
	Mm.	ft. ins.	Mm.	ft. ins.
Barrow (Cape)	1370	= 4 6	1220	= 4 0
Fritsch (Cape)	1445	= 4 9		—
Topinard (Cape)	1405	= 4 7½		—
Werner (Kalahari)	1550	= 5 1	1500	= 4 11
Schinz	1570	= 5 1½		—
Haddon	1529	= 5 0¼		—
Pearson (from skeletons)—				
Series 1	1444	= 4 9	1404	= 4 7¼
Series 2	1460	= 4 9½	1420	= 4 8

The skeleton in the Museum of the Royal College of Surgeons of England measures 1332 millimetres (4 feet 4½ inches). Barrow describes one Bushwoman as only measuring 1140 millimetres, and Wisbach a man of only 1000 millimetres; possibly he was not fully grown. The average stature of a series of skeletons obtained from caves on the sea coast which will be subsequently referred to was 1430 millimetres (4 feet 8¼ inches) for males and 1410 millimetres (4 feet 7¾ inches) for females.

Before proceeding to a description of the osteological features of the Bushmen it would be well to review briefly the Hottentots with whom they are often confused, although the latter were an invading race at the time of the European occupation of the Cape.

The Hottentots are yellow to olive in colour with tufted hair resembling the former group. They are taller (1600 millimetres, or 5 feet 3 inches), with small but long heads, flat noses, hollow backs, and small hands and feet. They are particularly liable to accumulate fat in the region of the buttocks, a condition known as steatopygia. It is possible they shared this feature with the Bushmen. They were a pastoral people, possessing as domestic animals the ox, sheep, and dog. Their weapons were the assegai, often made only of pointed and hardened wood, knobkerries, bows and arrows, and they used shields of hide. They were grouped in clans with hereditary chieftains of limited authority. They are still to be found in comparatively small numbers in Namaqualand; those still in the Cape under the designations of Karanna and Griqua are half castes. They were not artistic. The distinguishing features from the Bushmen were their stature and their customs. Owing to the confusion which existed in earlier colonial times as to the designation of these peoples descriptions have been very mixed, and investigation into their physical character has been rendered difficult owing to the uncertainty as to whether many specimens sent to English museums really belonged to the race to which they were referred. When the skulls in the collection of this College and in the museum of the Royal Army Medical Corps under the respective headings of Bushmen and Hottentots were contrasted, due allowance being made for the standard deviation of each group, no significant differences could be established. The Hottentot skulls are in most dimensions somewhat larger than those of Bushmen and both absolutely and relatively approach those of the Southern negroes. No materials exist in this country for a detailed comparison of the osteological features other than of the skulls of those two peoples.

Recently attention has been drawn to the remains in the caves, shelters, and kitchen middens along the coast of South Africa from the mouth of the Orange to that of the Kei. These skeletons were found associated with stone implements and sometimes fragments of pottery and are undoubtedly those of the beach-ranging Bushmen, or Strandloopers. These are the section of the race driven as far as possible to the south. They appear to have lived on such food as was driven ashore by the tide and to some extent by hunting. An examination of their skulls and such parts of the skeleton as are available show that they present the characteristics of the Bushmen in an exaggerated degree. A study of the average dimensions of their skulls and their standard deviations shows that while closely resembling and not being clearly distinguished from the up-country Bushmen skulls they could be definitely distinguished from the Hottentots. Their dimensions generally are smaller but the breadth of the head is actually greater than that of the Hottentots, the most striking features being that the Strandloopers are more brachycephalic, orthognathous, and microseme. It seems natural to conclude that these people represent the earlier inhabitants of the Cape and would present the purest racial characters. This view is confirmed by the fact that the coefficient of variation, $\frac{\text{standard deviation} \times 100}{\text{average}}$, is smaller for the group of Strandloopers' skulls than for that of the up-country Bushmen. It may be noted that the small range of variation in the dimensions of the Hottentot skulls shows that these were fairly homogeneous and would not agree with the hypothesis that the latter were a recent racial admixture recruited irregularly from both Bushmen and Bantu.

At the present time the Bushmen have been practically exterminated from Cape Colony, but remain in the Kalahari, possibly extending even a little to the north of the Cunene River. In the past they spread over all South Africa and their weapons have been found as far north as Nyasaland. An occasional individual of the Andorobo tribe has features recalling the Bushman, while the Doko of Larkipia and the Wa-sandawi have been said to be allied to that race, but as yet this is unconfirmed on either physical or linguistic grounds.

A problem of especial interest is that of determining the racial affinities of the Hottentots. As has been already shown, they closely resemble the Bushmen and undoubtedly are allied to that race. Their language, however, presents affinities to those of the Hamitic family which has led to the suggestion that they should be regarded as a cross between some Hamitic invaders of South Equatorial Africa and their Bushman forerunners. Stow and McCall Theal in their histories of the native races of South Africa are emphatically of the opinion that whatever the race mixture which produced the Hottentots was, the Bantu at least were not concerned. Craniological considerations do not, to my mind, confirm this. Unfortunately no good collection of the other bones of this race exist. The appearance of the Hottentot skulls in no way suggests any marked intermediate characters between those of Bushmen and of any more Hamitic race, while in the features in which they differ from the Bush crania they certainly resemble negroes. Prognathism is a marked feature which illustrates this. When the distribution of the various cranial and facial indices is compared it may be seen that the Hottentot in almost every case is intermediate between the Bushmen and the Bantu negroes. A study of the actual dimensions shows a certain similarity between the skulls of this race and those of the Djagga of Kilimanjaro. These differences may be investigated by noting the probability whether or not they could be simply explained by random selection, which can be ascertained from the standard deviations of the two groups. A table has been prepared in which are shown the numbers derived from such a comparison of various groups of skulls. In this table a number above 2 indicates considerable odds against the difference between the respective averages being due to random sampling, while a figure above 3 indicates the practical exclusion of such an explanation. By other methods which will be indicated in the study of the relationships of the negro peoples it can be shown that while the Hottentot measurements are in some respects intermediate between those of Bushmen and of Hamites they are more nearly intermediate between the Bushmen and the Bantu, and where they show this least they resemble the Soudanese negro more than the Hamite. As there is a strong probability that there is a strain of Hamitic blood in the Bantu it seems reasonable that the Hottentots may represent an earlier mixture of that former race with both negro and Bushman, but that they are a true Hamitic-Bush cross without a negro element seems opposed by all the existing anthropometrical evidence. The Hottentots seem never to have been a numerous people and are said to have largely recruited their female element from the Bushmen tribes which they displaced so that the type underwent a progressive change. Against this having occurred to a large extent may be urged the small percentage variability of their skulls and the absence of evidence of such intermixture on a large scale in historic times.

The second group of shorter peoples of Africa are the Negrillos of the central forest zone. In many respects their

characters resemble those of the negroes; their hair is frizzly, not in peppercorns; their complexion is, as a rule, lighter than the negro, but much darker than the Bushmen. Sir H. H. Johnston in the Semliki district distinguished two types, a light and a dark, and regards the lighter type as the purer. The M'Boulous of the Ogowé are described as of an earthy brown colour, the Obongo as dirty yellow coloured with hair tightly coiled in tufts. Watwas, on the bend of the Congo, were called by Stanley chocolate brown; Wolf described the Batwa as much lighter than the negro. The pygmies from the Ituri were very dark. Schweinfurth described his Akka as of the colour of slightly roasted coffee. The statures of the Negrillos show, as may be seen from the following table, a considerable range of variation, no doubt dependent on racial intermixture.

TABLE II.—*Giving the Statures of Negrillos.*

Race.	Male.		Female.	
	mm.	ft. ins.	mm.	ft. ins.
Akka	1360	= 4 5½	1260	= 4 1½
Batwa	1300	= 4 3	—	
Vatua	1390	= 4 6½	—	
Ituri Pygmies	1375	= 4 6¼	1300	= 4 3
Bamlute	1450	= 4 9	1360	= 4 5½
Obongo	1370	= 4 6	1400	= 4 7
Akoa	1510	= 4 11½	1420	= 4 8

Individuals are sometimes found much shorter—e.g., in Emin Pasha's *entourage* was an Akka woman only 1165 millimetres in height (3 feet 10 inches.) The hair is generally described as frizzly or tufted. They are markedly prognathous and present extremely broad nasal orifices and everted lips. The head form varies but is usually sub-brachycephalic, differing therein from the negro peoples. The highest index, and therefore the broadest head, recorded is 87 in an Akoa. I have collected the measurements of 27 pygmies from the Congo Nile watershed and find the average index in 21 males to be 78·9 with a standard deviation of 2·7240, and in six females 80·5 with a standard deviation of 2·3052. These figures may be contrasted with those of the Strandloopers who presented an average index for the male skull of 77·1; as this would correspond to 78–79 in the living it would thus appear that there is no appreciable difference. The general proportions of the body are, as pointed out by Flower, those of the taller peoples, so that they in no wise resemble the dwarfs of other races. The chief characteristics are the shortness of the trunk and the length of the upper limbs. The prognathism, absence of flattening of the face, and greater prominence of the brow ridges seem to distinguish them from the Bushmen, from whom they also differ in the absence of the tallier and of steatopygia, though it is extremely doubtful whether these latter features can be looked on as racial, in view of their far from universal occurrence among the race so characterised.

When models of examples of the two races are looked at side by side differences are very apparent; when average measurements and deviation are studied, resemblances become evident save as regards prognathism. It is interesting that the skull form of the older Bushmen should more closely resemble that of the Negrillos and that the purer type of the latter should be lighter in colour, while the general canon of proportions is very similar in the two cases. The Negrillos appear to show a greater variation in all characters and are probably a far more mixed people and the differences they show from the dwarf races of the south are those which might have been derived from negro intermixture. Yet tempting and even probable as is the hypothesis that they represent separate remains of the primitive peoples of South Equatorial Africa before the invasion of the negro and the subsequent contact metamorphism, it must for the present be regarded as at the best unproven. Further material for the investigation of either or both of these groups is urgently needed and would help to solve one of the most interesting problems of the world's history.

AT a meeting of the Incorporated Society of Medical Officers of Health to be held on April 10th Dr. Francis E. Fremantle, medical officer of health of the county of Hertford, will read a paper upon the Garden City, Rural Housing, and the Government.

The Lettsomian Lectures

ON

TUBERCULOSIS OF THE KIDNEY,

AND

MALIGNANT DISEASE OF THE CÆCUM.

Delivered before the Medical Society of London on Feb. 3rd and 17th, and March 2nd, 1908,

BY CHARTERS J. SYMONDS, M.S. LOND., F.R.C.S. ENG.,

SURGEON TO, AND JOINT LECTURER ON SURGERY AT, GUY'S HOSPITAL.

LECTURE III.[1]

Delivered on March 2nd.

MALIGNANT DISEASE OF THE CÆCUM.

MR. PRESIDENT AND GENTLEMEN,—Looking upon operative removal as the only remedy for malignant disease early recognition becomes of the first importance. Everyone recognises that it is sometimes difficult, and often impossible, to estimate accurately the nature of abdominal swellings without opening the cavity. There is a tendency on this account to two evils—first, to postpone operation till the appearance of certain well-known signs of disease, and so lose the most valuable moment for extirpation of malignant growths; and secondly, to lose confidence in the value of those signs which point to inoperable disease and to explore every case. To wait for signs of obstruction in intestinal cancer, or again for signs of cachexia, is to ignore the value of the early characters of malignant disease. Unfortunately, cancer is a painless malady for many months and in the intestine it is not until some degree of obstruction occurs, or a tumour makes its appearance, that it attracts attention. It is therefore important to remember that when these signs arise the disease has been in existence a long time and immediate operation is advisable—if advisable at all. In this regard the rectum may be used for illustration, where we so frequently find disease, already inoperable, with a history that must represent but a fraction of the duration of the disease. As regards cancer of the large intestine, excluding the rectum, with which this lecture specially deals to-night, the operative success is most satisfactory, even extensive removal being well borne. Again, lymphatic infection is slow to occur while extension to the peritoneum and other organs is long delayed, except in a few special instances. The immunity conferred is also satisfactory and will improve as the cases come earlier for operation.

No one must speak lightly of resection of the intestine, especially when, as in most of the suitable cases, the health is good and the vigour and working power are undiminished. A disaster will cut short a life with a year or more of satisfactory existence and useful performance. Resection, however, when the contents are not septic, requires but the requisite knowledge and dexterity to attain success—knowledge when to proceed with, when to abandon, an operation; what limits to set to the undertaking; a patience that will not fail when further but removeable infiltration is found after all had apparently been removed, and that will examine and see that no weak point in the defence has been left unprotected. The necessary dexterity in preparing and suturing the bowel is easily acquired, and then, if so conducted as to be made almost an extraperitoneal operation and all tugging on the mesentery and nerve plexuses avoided, the danger, when the disease is a limited one, is reduced to a minimum. Very different is it when more extensive operations are carried out, especially when having embarked on an apparently straightforward piece of work, unexpected difficulties are encountered that must be surmounted just because the operation has gone too far to be abandoned. Increased experience enables us to avoid attempting extirpation when such difficulties are likely to arise, and yet if we take too limited a view and shrink from accepting a considerable risk relievable conditions will be left.

The first part of the large intestine is particularly suitable for resection on account of the length of the mesentery, the ease with which it can be handled, and the satisfactory condition in which the parts can be left, for by joining the ileum

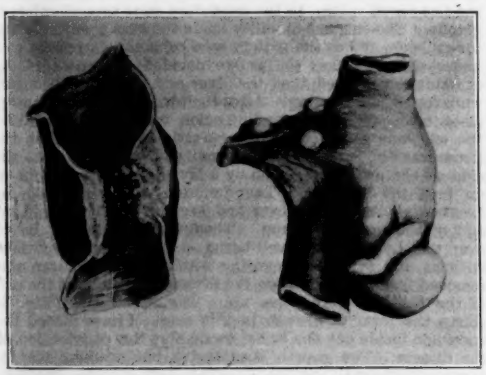
[1] Lectures I. and II. were published in THE LANCET of March 21st (p. 833), and 28th, 1908 (p. 916).

to the transverse colon the functions are practically undisturbed.

The purpose of this lecture will be to point out the characters of early cancer of the cæcum, and if time permit of the ascending colon, to show the comparative safety of operation in suitable cases, and the degree of immunity from recurrence that may be secured. The two main signs of malignant disease of the cæcum are the presence of a tumour and the occurrence of early intestinal colic due to obstruction of the ileo-cæcal orifice. The tumour in its most typical form is in my experience unlike any other morbid condition about the cæcum. It presents as a moveable, hard, well-defined tumour, so close to the abdominal wall that it may be grasped by the hand and even lifted from the posterior wall. From a position of rest the mass can be moved downwards for some distance, swinging as it descends towards the median line and the margin of the rectus; upwards it may be moved as far as the ribs, or half the distance, making a vertical course and not passing into the loin. During this movement a gurgle is often felt from air passing through the stricture. The range of movement will vary with the mobility of the cæcum in each individual. This part of the bowel may, for instance, be more or less tethered by a past appendicitis, and in women is more moveable than in men. The discovery of a tumour by the patient may be the first evidence of disease, as in Case 3. Intestinal colic, at first occasional and brief, may exist for some time before the patient comes for advice, and even then it is often treated without the possibility of a growth being kept in mind. In its more developed stages this colic is sharp, short, attended with gurgling and pain in the right iliac region. If the patient be taking food at the time of the colic part of the food may be rejected without nausea and he may return to his meal. This feature will be seen in one instance to have been of great assistance in forming the diagnosis. Colic will be an early symptom if the growth begins in the lips of the ileo-cæcal orifice. On the other hand, it may be absent in disease beginning in the posterior wall or just above the orifice. All these points are well illustrated by the following case:—

CASE 1. *Cancer of the ileo-cæcal valve; resection; well ten years later.*—The patient, a married woman, aged 48 years, was sent to me on Dec. 13th, 1897, by the late Mr. G. H. De'Ath of Buckingham. In July, 1897, she had great pain in the "centre of the stomach" and round the body with sickness. There were three such attacks in 14 days. In August there was a return of sharp spasmodic pains all over the abdomen.

FIG. 1.



Cancer of ileo-cæcal valve. The right-hand figure shows the growth involving the cæcum and appendix and the lymphatic glands. The hypertrophied ileum is seen in the lower half of the figure. The left hand figure shows the growth in section.

In September Mr. De'Ath examined the abdomen without finding any "internal enlargement." At this time, owing to her husband's illness, the patient was unable to attend to her own ailments, though the pains continued. From Nov. 5th to Dec. 5th the pain was worse and became right-sided, and at times she could not stand. For the last year she had not been well and had lost flesh. When seen by me on Dec. 13th the patient showed no evidence of a general illness. The pain was of a definite colicky type, was felt all over the abdomen, but most severely in the right iliac fossa. There was also gurgling with the pain. At the height of the spasm of pain she was frequently sick. In the right iliac fossa a hard irregular lump could be felt. It was moveable upwards and to a less extent downwards, swinging in its descent towards the median line. It could also be moved towards the umbilicus. It was easily handled and could almost be grasped. When the intestine had been irritated by friction, coils were visible and gurgling could be heard. The diagnosis gave in this case no great difficulty, for in addition to a mass possessing the characters of a new growth of the cæcum there were also visible coiling, gurgling, and the colicky pains characteristic of obstruction. The early onset of pain and the evidence of obstruction indicated that the ileo-cæcal valve had been primarily involved. The cæcum was removed in December, 1897, together with a large piece of mesentery containing enlarged glands. The end of the colon was closed and the ileum, considerably thickened, was united to the lateral aspect by a Murphy's button. The patient recovered rapidly from the operation and was alive and well in 1908—more than ten years after the operation.

The illustration (Fig. 1) shows the lips of the valve to be primarily involved, while the wall of the bowel is also infiltrated through to the peritoneum. Several enlarged glands are also visible. The hypertrophy of the ileum will be noticed. It was fortunate for this patient that the disease involved and obstructed the ileo-cæcal orifice, as the pain demanded relief.

The disastrous result of delay is shown by the following case seen in consultation with Mr. R. R. W. Oram of Wandsworth.

CASE 2. *Cancer of cæcum; extensive operation; death from hæmatemesis.*—The patient, a married woman, aged 34 years, was seen on June 8th, 1900, at the request of Mr. Oram. She gave a history of an attack of abdominal pain 14 days before. The whole "stomach" was sore and she had to remove her corsets. The pain soon ceased and she had a good night. On the next morning she had a temperature of 100° F., and a lump was found in the right iliac fossa. As this did not disappear with aperients, and was recognised as differing from the usual appendicular swelling, I was asked to see her on the above date. In the right iliac fossa, just above the line from the anterior spine to the umbilicus, was a hard, abruptly defined, freely moveable mass. Upwards it could be moved nearly to the ribs, downwards and inwards to the rectus margin, and also directly inwards. Examination gave no pain in the mass itself nor was there any dragging sensation felt in the pelvis. The mass could, like some of the others referred to, be grasped by the hand and raised from the iliac fossa. The situation, the special range of mobility, the history of pain of a colicky character, all indicated the presence of a growth in the cæcum. This opinion was given and the wisdom of immediate operation was pointed out. The age might seem to be a point against the diagnosis, but here previous experience showed that malignant growth at the age of 34 years is not uncommon in the large and even in the small bowel. I may mention a man with cancer of the cæcum at 34 years of age, and I have operated for malignant stricture of the hepatic flexure at 28, of the sigmoid at 19, and I have seen typical colloid cancer of the rectum at 16. That the lump in this case might be inflammatory and due to appendicitis was suggested by the sudden attack of pain 14 days before, by the rise in temperature, and by the finding of a lump on the next day by Mr. Oram. I would venture to lay down the fact that such mobility as was observed here never occurs with inflammatory swellings due to appendicitis. I have seen a swelling due to a large crystalline formation round a pin remain for three months unaltered, but it was an immoveable swelling. A fæcal accumulation again does not, so far as I have seen, present so hard and limited a tumour, nor is it so moveable. It might have been a moveable kidney containing a stone, but against such a view was its rarity and the crucial fact that when pressed up the tumour dragged from below, evidently from an attachment in the iliac fossa, and again did not disappear into the loin. The shape and size excluded an ovarian with a long pedicle.

Before deciding upon operation the opinion of a physician was sought in July and he, to my regret, counselled against operation, so far as I could gather for two reasons: first, because the lump was moveable and looked therefore so

simple; and secondly, because he could not decide what it was. The disadvantage of not combining personally in such a consultation is seen in the sequel. Expectant treatment was followed; the lump increased; and at the end of six months I was called to see the lady who was in great distress from abdominal pain. There was now a large apparently inoperable mass, with dilatation and hypertrophy of the small intestine. The day before there had been an attack suggesting perforation and I learnt that for some time all the symptoms had grown worse, especially those of chronic intestinal obstruction. Short-circuiting seemed now the only relief to be afforded, and with this object the abdomen was opened in the linea semilunaris. The end of the ileum was difficult to discover on account of adhesion to the large mass of growth. In the search the whole mass was raised up and though at first sight inoperable extirpation now seemed possible. There were several mesenteric glands, some close to the spine, but there were no secondary deposits in the liver or parietal peritoneum. Looking to the inevitable and early termination of such a condition I decided to extirpate the disease. It was an extensive operation as a good deal of the mesentery had to be removed, but was completed without the patient exhibiting any particular distress during the performance. The shock following was quite moderate and the outlook at the time appeared to justify the decision to proceed. The colon was closed and the end of the ileum united to its side by a Murphy's button. She recovered from the shock which was necessarily severe, but in a few hours uncontrollable vomiting set in. The material vomited contained blood from the first and this black character persisted till her death on the third day. No doubt the interference with the sympathetic nerves involved in so extensive a removal of the mesentery proved too much for the patient and determined the hæmatemesis and reflex vomiting. At the same time she was young and had, notwithstanding the duration and extent of the disease, preserved much energy and cheerfulness. There was besides no cachexia and the wasting might well be explained by the diminished ability to take food on account of the colic.

It is difficult to define the limit to which one may go in dealing with extensive cases, as there are so many on the borderland. This one was, no doubt, as it proved, in the inoperable area. Still, each must find out for himself when to stop an operation and not be influenced by the question of percentage of success. That must never enter into one's calculations; the welfare of the patient must be, and must be alone, the first and last consideration. In this case there was but one inevitable termination and that a speedy one. The conversion of what was intended to be an anastomosis of the ileum with the colon into an extensive resection was made when it was found that the mass could be raised from the iliac fossa. If operated upon as advised when seen in June what might not have been the result?

Where the posterior wall is the seat of disease, or where the growth is of a diffused type, the tumour will not be so defined, and here the symptoms of obstruction will come on later. Some of these diffused cases give rise to much difficulty in diagnosis, especially when the cæcum is abnormally moveable. A good example is that of Case 3.

CASE 3. *Diffused cancer of the cæcum; resection; recovery.*—A vigorous, active, spare man, aged 75 years, was seen in consultation with Mr. Donald W. Smallpiece for abdominal pain, wasting, and indigestion, and a doubtful swelling in the right ilio-lumbar region. For some time the symptoms had existed and the colic had been felt all over the abdomen. Dr. J. F. Goodhart, who had seen this patient, has been good enough to give me a summary of the notes he made when he saw the patient a few months before the visit to me. From the pain and wasting malignant disease was suspected and this was strengthened by a resistance felt below the ribs on the right side. Three weeks later at a second visit this resistance was more marked and Dr. Goodhart thought it must be a gall-bladder containing a stone. He suggested that a surgical opinion should be taken but added, "I hesitate to advise operation at 74." Other opinions threw no further light upon the case. When I saw the patient some weeks had elapsed since the above note was made and we could then distinctly feel a well-defined mass in the ilio-lumbar region. On deep inspiration it came forward and could be pushed over to the umbilicus. When pressed from the front it slipped back with a rush into the loin. Irregular, flattened, only slightly nodular, moveable to an extreme degree, and painless, it felt more like a diffused thickening of the cæcum and colon than a localised new growth. The low position and these characters excluded a gall-bladder, but it might have been a loose and altered kidney. Now it transpired that some years before the patient had passed a renal calculus and it was quite possible that a sacculated relic of the kidney remained possessing unusual mobility. Covered by a colon and freely moveable, such a swelling as occurred in this case might be thus explained. I have seen such a kidney in the pelvis. The most likely diagnosis, looking to the situation, to the mobility, to the indigestion, and to the colic, was that of a growth of the cæcum interfering with the ileo-cæcal valve. The effect of past ulceration could not be excluded, especially as the patient had spent some time in tropical countries. Tuberculosis was considered, but the age of the patient, together with the mobility and his good health, were opposed to this view. Exploration of the abdomen was advised, for though he was 75 years old yet as regards powers of resistance he was more than ten years younger. He was himself almost insistent for an operation for, as he said, beyond the colicky pain, he was quite well. Feeling myself that if we are to obtain these cases early enough to be of service we must not wait till all the clinical signs are present I myself urged operation. The wasting might well be attributed to the necessity for careful dieting and this was confirmed by the preservation of all his energy and cheerfulness, by the absence of pallor, and the presence of a strong pulse with good tone. He possessed a good appetite and enjoyed his food when there was no pain. We were fortunate, after he had entered the home, to observe on two occasions an attack of the colic. While taking a meal he had sudden pain, followed by vomiting without nausea. After rejecting a part of the meal already taken he returned and finished the food of which he felt in need. The peculiarity of the attacks confirmed the opinion I had formed myself that there was obstruction at or near the ileo-cæcal orifice.

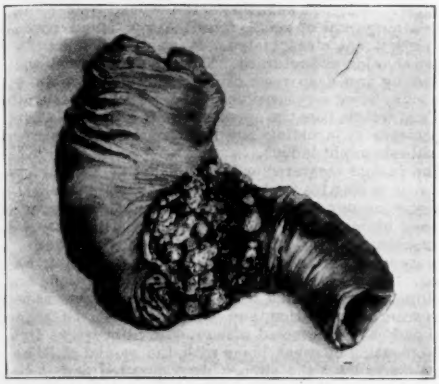
We decided to perform the operation and after ascertaining the conditions to proceed to excision of the cæcum and as much of the ascending colon as might be necessary. If the glandular involvement proved too extensive for removal, or if he were not standing the operation well, to be content with short-circuiting. Through the right rectus the abdomen was opened, when the moveable swelling was found to be the cæcum. The peritoneum was white and thickened to an unusual degree and the appendix was long and enlarged. The parts looked as if there had been old and frequent peritonitis, without fixation, and that the appendix was the cause of this condition. Further examination revealed a nodular thickening of the cæcum and neighbouring part of the colon. There was no outstanding hard growth, but rather a diffused condition, ending abruptly some one and a half inches above the ileo-cæcal valve. In the mesentery were several enlarged glands. The extreme mobility made the case a suitable one for excision, and as the patient was behaving extremely well under the operation so far we decided to proceed. An examination showed that the liver and parietal peritoneum were free from infection. After ligaturing off the mesentery close to the spine the ascending colon was first divided and the end was closed by two purse-string sutures. Then the ileum was divided and the proximal end was fixed into the side of the ascending colon by a Murphy's button, $\frac{1}{12}$ths of an inch in diameter. The junction was supported by Lembert's sutures, and over and secured to it was laid the end of the great omentum. Though the operation lasted over two hours it was well borne and the patient recovered without any symptoms causing anxiety. The button was removed from the rectum on the fifteenth day and at the end of the third week he was up. The illustration (Fig. 2) shows the form of growth in this case. I have turned the specimen inside out the better to display the distribution of the disease. The growth is extensive, but nowhere deep, is composed of small rounded masses, and involves the ileo-cæcal valve.

This patient soon resumed his active habits, including cycling, notwithstanding a stitch sinus, which caused, however, very slight inconvenience till the end of a year when a piece of silk came away. At the present time (March, 1908) he remains well and shows no signs of recurrence, still cycles, and leads an active life.

The obvious comment upon such a case is the justification of operating at 75 years of age. Everything depends upon the individual. Not only was this man active and vigorous but he had a most cheerful disposition and did not fret under regulations. It is an old truism that the resisting power must not be gauged by age alone. This man had led an

abstemious, healthy, outdoor life and his mental powers were in keeping with his bodily activity. He was, moreover, of a cheerful disposition, and himself long accustomed to high naval command, took everything as a matter of course. In estimating resisting power in malignant disease nothing, I take it, is more important than to distinguish between the wasting due to cachexia and that due, on the one hand, to interference with digestion only, or on the other, to pain or other symptoms that may induce loss of sleep. The patient

FIG. 2.



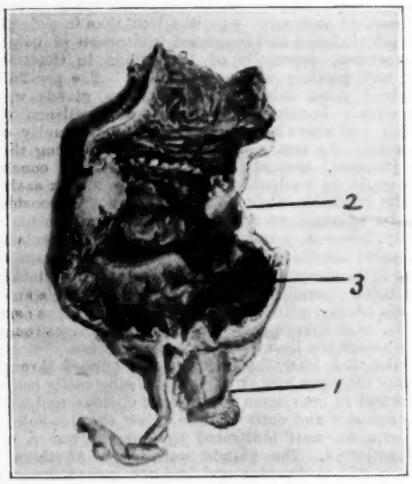
The cæcum and ileum have been turned inside out to show the flat nodular ulcerating growth. The patient was 75 years of age.

who preserves his energy and vigour, his mental alertness, and has a pulse of good tone may be estimated as possessing good resisting power. One must not be deceived by the man who exhibits a fictitious activity, beneath which one can recognise artificial stimulation and the signs of arterial and visceral degeneration. This and Case 1 indicate what might have been done in Case 2 if operated upon when advised. Age, then, is in itself no deterring condition, nor are certain conditions of the heart and general health, as shown by the next case.

CASE 4. *Cancer without obstruction of the valve; resection; recovery.*—The patient, a married woman, aged 59 years, was brought to see me by Dr. G. C. Steele-Perkins on Feb. 29th, 1904, with the following history. Five weeks before, while rubbing the abdomen, she had noticed a lump in the right side, and for this consulted Dr. Steele-Perkins. On Feb. 10th he found a hard moveable swelling in the situation of the head of the cæcum. There were no tenderness on handling and practically no associated symptoms. Looking upon the swelling as in all probability partly fæcal, aperients were administered and some reduction in size was effected, but as the main tumour still remained I was asked to see the case in consultation. The mass lay in the right iliac fossa, was hard, somewhat nodular, and freely moveable. Its position of rest was in a line drawn from the iliac spine to the umbilicus; it could be moved upwards nearly to the ribs and downwards to the outer border of the rectus. It could be almost surrounded by the hand and grasped. It resembled in some respects a moveable kidney and could indeed hardly be confused with anything else. The position of rest was, however, quite against this view, for, so far as I have seen, neither a loose kidney, a moveable right hepatic lobe, nor a gall-bladder ever occupies so low a position. Again, none of these structures give the nodular outline found in this mass. There was no gurgle in the lower part of the ileum nor had there been any colicky pains. The valve was, therefore, at present free. The mass was higher than the usual situation of the ileo-colic valve and we considered the infiltration as beginning in the posterior wall above this orifice. This situation would explain the absence of obstruction. The patient herself was a highly nervous woman and suffered from "heart disease." We ascertained that she had consulted Mr. F. G. Larkin of Grove Park for the cardiac condition. On communicating with him we found that a marked irregularity with attacks of dyspnœa from time to time were the chief signs of the cardiac ailment. Mr. Larkin had considered the condition mainly a nervous one and had never found evidence of organic disease. Still, the fact remained that the woman was by no means a favourable subject for operation. The growth, however, was, so far as we could ascertain, still limited to the cæcum. As to the duration it appeared that six months before a small nodule had been observed in the situation of the present mass by Mr. Larkin, of which, however, no further notice was taken. On March 14th the patient was moved into a nursing home, but this brought on so severe a nervous attack that she had to return to her own home next day. In a few days, however, she was able to face the operation which was performed and in the able hands of Dr. J. F. W. Silk the patient took the A.C.E. mixture without causing the slightest anxiety.

The growth, as shown in Fig. 3, involved the colon just above the valve and though the orifice was displaced it was not obstructed. The glands in the mesentery were numerous, though for the most part accessible. The cæcum and nearly the whole length of the ascending colon were removed, together with the mesentery and glands up to the spinal column. The distal end of the colon was closed and the end of the ileum united by means of a Murphy's button to the inner aspect, two inches beyond the closed extremity. Once the operation was over the patient's nervous symptoms settled down and an excellent recovery followed. The glandular enlargement

FIG. 3.



The ileum is seen below (1). The growth (2) is seen just above the ileo-cæcal valve (3).

was in this instance beyond complete removal. The furthest gland removed was of fair size and there can be no doubt that smaller and more distant ones existed. It was the interference with vessels in removing the glands that necessitated so extensive a sacrifice of intestine. The case demonstrates the comparatively small risk of such an operation, even in unfavourable subjects. Obtained early the prospects of complete immunity are most encouraging. This patient died rather more than three years after the operation from some cardio-pulmonary condition that was not attributed to recurrent disease.

A tumour that may appear before the abdomen is opened a possible case for excision may prove inoperable or nearly so when brought into view. Dismissing the questions of secondary infection of the peritoneum and of the liver as obvious contra-indications, does infiltration of a coil of adherent intestine negative resection? The following case shows that this can be successfully carried out, but also indicates that there was peritoneal infection, though not yet advanced to the stage of deposit. As the case illustrates several important features of disease of the cæcum and some of the troubles following upon these extensive operations it is worth recording in detail.

CASE 5. *Cancer of cæcum and of an adherent coil of ileum; double resection; hiccough; protrusion of bowel; malignant infection of the abdominal wall.*—The patient, a man,

aged 52 years, was sent to me on Nov. 12th, 1904, by Mr. G. N. P. Carrell of Ilford who had discovered a mass in the patient's right iliac fossa. In August, 1904, he had fleeting abdominal pain, felt as a gripe of short duration, sometimes low down, at others near the umbilicus, though it seemed to start in the right side. There were with these attacks some nausea and loss of appetite. These spasmodic pains lasted four or five days and there was no recurrence till six weeks ago, though some uneasiness remained in the right side. As he put it, "I knew I had a right side." Six weeks previously, on Oct. 1st, these griping pains returned, being again central or right-sided. The spasm lasted about a minute and he now observed some local tenderness. With this recurrence there were no loss of appetite and no nausea. He now for the first time sought medical advice and under Mr. Carrell's treatment the attacks subsided and the sense of "having a right side" disappeared. The swelling about to be described was discovered by Mr. Carrell on making a routine examination.

The patient was a spare, nervous man of the hard-working type and made light of his symptoms. In the right iliac region was a hard, irregular tumour, moving on respiration. The centre of the mass when at rest lay under the rectus. It could be pressed upwards for a short distance and further inwards under the rectus. The outer edge could be slipped away under the fingers. Above the mass there was gurgling on handling, but no peristaltic action could be elicited. The position, the range of movement, the gurgling above, and the size of the mass pointed to a new growth in the cæcum. The range of movement was less free than in a simple and uncomplicated case and suggested infiltration of neighbouring structures, especially of the glands in the ileo-colic angle, and possibly of the omentum. The possibility of the whole mass being due to caseous glands was also in question. Looking, however, to the evidence of the gurgling just above as indicative of the continuity of the cæcum with the mass, a new growth, involving the ileo-colic junction, seemed the most reasonable conclusion. There could be no doubt that the disease was extensive and that the extension under the rectus indicated considerable glandular enlargement or infiltration of the omentum. The mobility, however, pointed to the possibility of excision and the general condition was fair, though the nervous energy was a little abnormal and deceptive. The patient's condition being, therefore, in a general sense suitable an operation was advised with a view to resection of the cæcum if possible, or if this appeared from the conditions found unwise to attach the ileum to the ascending colon.

On Dec. 3rd, 1904, the abdomen was opened through the sheath of the right rectus, the nerves being easily preserved. The growth in the cæcum was at once obvious, and adherent to the anterior and outer surface below the ileo-colic junction, with its wall infiltrated by growth, was a coil of small intestine. The glands were some of them large but were still encapsuled and had not caused the swelling noticed beneath the rectus. This was due to the adherent small intestine and its mesentery. There were no infiltration of the iliac fossa and no secondary deposit in the liver or peritoneum. Though a double resection was required there appeared no reason, so far as the man's strength was concerned, why it should not be accomplished. The small intestine was clamped with Doyen's broad ligament forceps and three inches were removed. The ends were united by two continuous sutures of silk without the use of any temporary support. The cæcum was isolated by ligaturing the mesentery as near the spine as possible. Glands were found close to the spinal column and there can be little doubt that some were left. The ileum was clamped and divided, then the ascending colon was divided two inches above the growth, and the whole was removed. The ascending colon was closed by a continuous suture through all the coats, drawn tightly, and by another continuous Lembert's suture, thus making a blind end. The end of the ileum was then attached to the lateral aspect of the colon about one and a half inches above the termination by means of a Murphy's button. The junction was further secured by interrupted silk sutures and by folding round the site the end of the great omentum. The abdomen was closed by catgut in this case, one row in the peritoneum and posterior rectus sheath, the other in the anterior sheath. The skin was united by salmon gut. The specimen showed the disease to have commenced in the lower part of the cæcum. To the anterior wall the small intestine was adherent. The ileo-cæcal orifice was obstructed by folding and pressure, not by direct infiltration.

The operation was well borne and by the aid of subcutaneous infusions the patient recovered satisfactorily. The early vomiting was succeeded by the most violent and persistent hiccough I have ever seen. It went on for four days and was not relieved by any of the means employed, even induced vomiting being tried. It was so violent that it shook the man and his bed and was practically incessant. Happily the pulse kept good and counted usually 96, 100, or 110. The temperature never rose above normal. When the hiccoughing ceased we observed some bulging of the wound and later a serous exudation. It was obvious that the abdominal wall had given way and the intestine had escaped. Without anæsthesia the wound was opened up and a large coil of small intestine was found covered by lymph but not strangulated. It was cleaned lightly with saline solution and returned. Then the abdominal wall was closed by two deep rows of silk and a final skin suture. The man, being very sensible and possessed of great fortitude and endurance, bore the operation well, fully recognising the importance of avoiding any recurrence of hiccough which anæsthesia might induce.

The patient recovered without giving us any anxiety and was soon taking his food well. The abdominal wound was, however, never comfortable, and, as might well be expected in such circumstances, the silk sutures began to give rise to trouble, and for this one was prepared. However, the appearance of the skin, though united throughout, was unusual. It was raised in dark bluish-red elevations and the swelling did not subside with the escape of pus, as is usual with suture suppuration, and one feared that the abdominal wall had become infected with growth. Six weeks from the first operation he went home with the wound still swollen. Some weeks later the sinuses were curetted and it became clear that a soft growth infiltrated the abdominal wall. Gradually this spread up and down the rectus, forming bluish-red elevations and preventing his holding himself erect. Later a fæcal fistula formed and he died from exhaustion.

The infection of the abdominal wall in this way I have not seen before or since. It is common to open the peritoneum and give exit to serum in malignant cases, and even to divide peritoneal nodules, without infection of the wound taking place, so that infection by cancer cells during the operation is unlikely, because it ought to have occurred in other and similar cases. That all the growth was removed there is, I think, no doubt, for everywhere it was free and unbroken. It is possible, however, that in dealing with the glands close to the spinal column cancer cells may have been liberated and one may even have cut across a gland and so infected the peritoneum. But, again, this has been done before without such a result as happened in this case. Whatever view we take—i.e., whether the peritoneum was infected before or during operation—the fact determining the wound infection was the protrusion of the bowel and its presence there probably for two or three days. We had no necropsy, but it is not difficult to imagine that the colon became adherent to the abdominal wall and perforated.

Was it wise, in the presence of adhesion and infiltration of a coil of small intestine, to proceed to extirpation? Does such an infiltration indicate peritoneal infection? The answer to these questions surely is, that we had to deal here, so far as we could judge, with a local adhesion and infiltration, and that in the ascertained absence of nodules in the parietal and visceral peritoneum and in the liver the proceeding as carried out was justifiable. Had the hiccough not determined yielding of the catgut and protrusion of the intestine, there can be little doubt that primary union would have occurred and a considerable interval of good health would have been enjoyed. That recurrence would ultimately have ensued there can be no doubt. The imperfect removal of glands seemed at the time the only unsatisfactory part of this operation, yet in other instances where apparently removal was imperfect immunity has been maintained for some years as in Case 3.

Diagnosis.

As I have said earlier in this lecture I doubt if any other condition gives exactly the form of tumour described as typical of malignant disease. The swellings in the region of the cæcum, raising the question of diagnosis, may be classified thus :—

First, because most common, come the conditions resulting from appendicitis. The induration disappears in this condition, except when the concretion escapes and lies in a cavity outside the appendix. It is then that lime salts

become deposited over a fæcal concretion or over a foreign body. I have a specimen where a pin has been covered by a large crystalline mass. The man was 30 years old and the lump existed for over three months, and may have been there before. Altogether I have had seven such cases. In all these the patients had had acute attacks, the mass was hard and fixed, did not increase in size, and did not give rise to colic. In a man over 60 years of age there was a hard irregular lump fixed to the abdominal wall. It could be outlined quite easily, but it was too small for an adherent growth and did not reach deep enough into the iliac fossa. It proved to be the appendix in the very unusual position of being adherent to the abdominal wall and surrounded by the effects of a recent acute attack. Fixation and a small mass were the two great points in diagnosis. The resemblance was exemplified in Case 2, where after an attack of pain in the night a lump was found and the temperature was raised. The persistence and mobility of this mass led, however, to further advice being taken. The danger of a brief and single examination was well seen in the case of a man of 42 years brought to me in November, 1899, for removal of the appendix. A history of several attacks of pain was given; he had been seen in February by an eminent authority in one of these attacks, with slight elevation of temperature, when operation was advised. In May there was another attack of pain which laid him up for a week, and all the year there was indigestion. The night before I saw the patient he had been in a good deal of distress. All arrangements had been made for operation, the day settled, and the forthcoming marriage was to follow. Wishing to see the patient before deciding upon the operation he walked in apparently with ease and alacrity, rather thin and pale, but considering himself well except for this pain. He had been shooting and otherwise going about as usual. The presence of extensive growth was only too obvious, not only in the cæcum and iliac fossa but in the pelvis and in the omentum. The surprise at such a diagnosis was naturally great and exploratory operation was insisted upon. This took but a few minutes, the parts needing little disturbance to confirm the widespread character of the cancer. The end was tragic, though merciful. Propped up in bed smoking a cigarette on the fourth or fifth day he fell back in a moment dead from cardiac embolism.

Secondly, when cancer attacks the posterior wall early perforation may take place with fixation and suppuration. Here the resemblance to subacute cases of appendicitis—cases commencing even about 60—is very close. I was called some years ago to relieve a patient with flexion of the hip after suppuration in the iliac fossa. The abscess had closed and the case was looked upon as one of appendicitis. I found the iliac fossa occupied by a hard growth, a mass in the cæcum, and typical peristalsis of the ileum. The cæcum, which I obtained later, showed an epitheliomatous ulcer on the posterior wall less than an inch in diameter. The iliacus muscle was infiltrated with cylindrical epithelioma. I refer to this type of case because, though representing a later stage of disease, we may be called upon to give an opinion when fixation has occurred and even suppuration. I have notes of another case where the patient came with a sinus over the iliac crest exactly resembling that occurring after suppurating appendicitis. The close resemblance must some ime find the surgeon operating upon what looks like a non-malignant condition.

The next mass found in this region is caused by glands in the angle between the ileum and cæcum. In four cases these formed definite tumours. In a girl of 20 years it was very hard and irregular and though lying further inward than usual it was, I thought, due to an escaped concretion round which lime salts had been deposited. A mass of calcareous gland was found in the ileo-colic angle and removed. The appendix was free and was also removed though it showed no tuberculous deposit nor was any observed in the cæcum. This patient later had signs of general tubercle. Another case occurred in a young man of 19 years. Here the glands were succulent and infiltrated the walls of both portions of intestine; they were not removed for resection of the cæcum would have been required. The patient has completely recovered. Glands in this situation occur mostly in young people when the diagnosis of malignant disease may be put aside. But occasionally an old centre may recrudesce and give rise to much difficulty. In a man over 40 years seen in consultation, where the question of malignancy was raised, such a condition had probably existed in earlier life. The thickening was irregular, without the characteristic movement, and not so abrupt and defined as has been described. Subsequent progress justified the withholding of an exploration in this case.

A gland situated on the inner aspect of the ascending colon, one and a half inches above the junction of the ileum and already suppurating, gave rise to some difficulty in diagnosis, especially as the lump moved with the cæcum. The patient having a good deal of pain and being about 30 years old, operation was considered wise. The abscess, a small one, lying under the peritoneum covering the colon at the mesenteric margin, was dissected out and a good recovery followed.

A fourth condition is tuberculosis of the cæcum. The resemblance between these two conditions was fully illustrated in the paper read by Professor Hartmann before this society on Ileo-cæcal Tuberculosis. It may be said that tuberculosis occurs in earlier life and that fixation arises sooner than in cancer. The resemblance is seen in the situation and form of the tumour, the colic, and the obstruction at the ileo-cæcal valve. Again in both suppuration may occur and a fæcal fistula ensue. In a woman, aged 24 years, under my care in Guy's Hospital in 1895 with a fæcal fistula and a hard irregular mass in the cæcum there was a history of obstruction and pain. In two stages the cæcum was excised and the ileum joined up with the colon. The disease was tuberculous and this view was further supported by her admission last year with spinal disease and old phthisis. Professor Hartmann's paper showed that even when exposed such a mass may be difficult to distinguish from cancer. Both require removal so that error is of less moment except so far as regards the extirpation of lymphatic infection.

Actinomycosis in its early stages resembles more closely that form of appendicular swelling due to a calcareous covered concretion in that both tumours are fixed and do not disappear. In the later stages, when infiltration and suppuration occur, there is a resemblance to that form of malignant disease beginning in the posterior wall and attended by suppuration. Both conditions are at this period, however, inoperable. A typical case will be found recorded in the Transactions of the Royal Medical and Chirurgical Society, vol. lxxv., p. 63, by the late Dr. Ransome, with whom I saw the patient on several occasions. This patient in 1886 had some uneasiness in the right iliac region and thought he had a hernia. On Oct. 12th, 1888, he had indefinite and occasional pains, pain at sometimes severe and at irregular intervals and increased by movement of the right leg. On the 21st he was seized with great pain in the right iliac fossa. Then was there found a distinct, firm, rather uneven, solid mass, very tender to pressure and in the position of the cæcum. From this time there was rapid extension to the iliac fossa and abdominal wall and he died with secondary deposits in the liver and brain.

Limits of Operation.

So mobile is the growth, even in some advanced cases, that until the abdomen is opened one cannot be certain whether extirpation is possible or not. Even then it is sometimes difficult to decide and one is tempted to go forward when the glandular infection cannot be fully limited. The presence of ascites and of secondary deposits in the peritoneum or liver puts excision out of the question. Adhesion to the posterior wall with infiltration of the muscle or with a sinus also makes removal impossible. Infiltration of the anterior abdominal wall, unless very limited, must also render complete eradication impossible. In one instance I undertook the removal of recurrent growth where the scar in the abdominal wall was involved. Some time before another surgeon had opened the cæcum and removed a polypus attached to the posterior wall. Though I made a wide removal of the intestine and abdominal wall recurrence took place rather quickly.

How far should enlarged glands set a limit to the question of resection? Theoretically a gland as large as a bean, close to the spine, infers lymphatic infection beyond and points to the impossibility of eradicating the disease. On such a view resection ought to be abandoned. Experience, however, renders a different answer, for in the patient, aged 75 years, a gland was inclosed in a ligature, and part had to be left, for already the dissection had reached the aorta, yet he shows no signs of recurrence after four years. In a case not recorded in this lecture, where the whole of the ascending colon together with the hepatic flexure and the cæcum were removed, it was quite impossible to get beyond all obvious gland enlargement, though at the attempt the duodenum was uncovered and the lesser sac of the peritoneum opened up. This man showed also the pallor caused by necrotic

growth, and yet, though just upon four years have elapsed, he is well and in full work—a better result up to now than I had anticipated. That many of these glands are free from cancer is no new observation. The subsidence of submaxillary glands, secondary to a foul malignant ulcer of the tongue or pharynx, when the primary disease has been removed or rendered aseptic by the x rays or by vaccine, is well known. Therefore it must be a very extensive infection that should set a limit to excision, and by this time probably there will be stronger local reasons for abandoning the operation. More important is the character of the glands. Those met with have been all smooth and succulent; it is the hard nodular enlargement that shows definite infection. Even, however, when glands must be left removal of the primary disease should not be abandoned when other conditions are favourable, as a considerable measure of relief will follow.

Involvement of a neighbouring coil of intestine is not, as a rule, a bar to excision, for there need be no general peritoneal infection. In the case recorded here (Case 4) there can be little doubt, as the sequel proved, that general infection existed. We have no means of ascertaining such a degree of infection, for there was no serum and therefore, other things being favourable, I see no reason against a double resection.

Should pallor or anæmia deter us from operation? I suppose one may recognise three forms of pallor in malignant disease: that which is due to dissemination of growth, that which is due to small and unnoticed losses of blood, as in gastric carcinoma, and that caused by septic absorption from necrotic changes in the growth. This last form comes early in malignant disease of the bowel, as it does in cancer of the mouth, pharynx, and œsophagus. It is the form relieved by injections and the x rays. Certainly pallor in patients over 60 years of age, and in younger people whose visceral conditions are not sound, sets a limit to extensive operation. Occasionally, however, when the patient is young and robust it may be safe to operate in the presence of this condition. The following is a case in point. In a man aged about 40 years, of a particularly robust constitution, with a large malignant growth of the hepatic flexure, and, except for his pallor, in good general condition, I resected the cæcum and colon to the middle of the transverse portion successfully. The removal of the mesentery involved opening the lesser sac and a dissection over the duodenum to the pancreas, and yet he is at the present time, just four years from the operation, in full work. The limits as to age I have already referred to and as to cardiac conditions of a nervous kind.

The established rule to postpone resection followed by anastomosis and to be content with anastomosis only when the contents of the bowel are septic is applicable here as elsewhere. When this exists the ileum should be united with the colon by direct suture and ten days later the resection carried out. It is better to make the first operation through the median line, leaving the rectus sheath for the resection. The presence of visible peristalsis is not in itself a bar to immediate resection, for the small intestine may be capable of emptying itself and the contents may not be septic. But when, with peristalsis, the small intestine continues to be dilated then resection carries special dangers and should be delayed till the bowel is healthy. Some years ago, before one was perfectly clear on this point, I lost two patients from attempting the full operation in the presence of obstruction.

Palliative Treatment.

Short-circuiting will relieve where the disease is too extensive for removal. The question arises here whether lateral anastomosis of the ileum to the transverse colon is sufficient without division or some other method of occlusion of the ileum beyond the junction. No doubt it is more perfect to prevent the contents of the small intestine passing over the growth, but I doubt if it does any great harm in an inoperable case. I have carried out anastomosis by direct suture of the ileum and transverse colon on several occasions without being able to detect any special disadvantage. On the other hand, there is a tendency for the fæcal material to accumulate between the junction and the obstruction if the ileum be divided or otherwise closed, giving rise to much inconvenience. The passage of even a small amount of the bowel contents through the stricture appears to be sufficient to prevent this accumulation.

The Value of the Murphy Button.

It will be noticed that the junction of the ileum to the colon was effected in the cases here reported by the excellent mechanical device introduced by Mr. Murphy. For making a junction between the end of the small intestine and the side of the large in the absence of septic contents I find this method more convenient than direct suture. Here I must, however, insist that I never use the button without supplementing it by a row of Lembert's sutures all round, and where possible enfolding the junction by the great omentum. The size of the button must be under an inch—the $\frac{7}{8}$ths I find a convenient size—or even a smaller one makes a sufficiently large opening. It is also of importance to see that the spring is strong enough, for buttons are sold imperfect in this respect. Again, in joining the end of one piece to the side of the other it is most important to be sure of the vascularity of the ileum. The first section may appear flabby owing to the ligature of the mesenteric vessels: if so, a further piece must be removed. The cut surface, in fact, should bleed freely. I am inclined to think that some of the failures reported with Murphy's button have been due to neglect of these points. The line of division of the bowel has not been made to secure vascularity of the part opposite the mesentery, or the button has been too large, or again pieces of septic mucous membrane have been left protruding, or there has been too much strain on the junction, and lastly, the protecting Lembert's sutures have not been inserted. It will also be observed that end-to-end junction of the small to the large intestine was not employed, but instead anastomosis of the end of the ileum into the side of the colon, the lumen of the latter having been previously closed by two continuous sutures. It is difficult to suture the ends of the small and large intestine and it is unnecessary and, moreover, it takes much longer. The third plan is to close the ends of both and make a lateral anastomosis. It is the best if direct suture be employed, for it is easier, safer, and quicker—even including the time necessary for closing the ileum—than joining the end of the ileum to the side of the colon. The button I find then of great service whenever the bowel is healthy and the contents are free from the septic changes of obstruction. For end-to-side anastomosis it is admirable, especially when the upper and lower pieces of the bowel differ in size; for example, in chronic obstruction of the ileum from tuberculous or malignant stricture the lower end is thus inserted into the side of the upper, a thin and normal piece into a greatly dilated and thickened piece.

I must not conclude these lectures without some reference, however brief, to the physician in whose memory they have been founded. A perusal of Mr. Pettigrew's "Memoirs" and some of the many letters he has collected leaves the impression that Dr. Lettsom was a man of remarkable character. To yield up your only source of income at 23 in order to free your slaves requires some courage. With the money saved out of his first six months' practice he returned to England and completed his education, both here and on the continent, and at 26 began practice in London, as it is quaintly put, "under the protection of Dr. Fothergill," which means, I suppose, that he joined him in partnership. He was only 29 when he was chiefly instrumental in founding the Medical Society. Whatever movement was on foot for the promotion of scientific investigation or for the benefit of the poor Dr. Lettsom took an active part. He founded the Royal Humane Society and the Sea Bathing Infirmary at Margate and was president of the Philosophical Society at the time of his death. Writing when 46 to a friend older than himself he says, "I grow old rapidly. The sempster time has lately worked up my thread very fast and I want a pause between the two worlds." His activity, however, did not diminish and when Jenner published his discovery in 1797 Lettsom, then 53, actively took up the new treatment, and so valuable was the paper he wrote in its support that it was republished at Jenner's request. It was to his friend, Dr. Waterhouse of Cambridge, Massachusetts, that the first consignment of lymph was sent to America. His end was typical of his active life. He had made a necropsy and probably was infected. Rigors soon followed but he insisted on going about, resisting the advice of his friend Pettigrew that he should see Dr. Babbington. He, however, was obliged to submit and a week after the onset of the illness he died at the age of 71, in the year of Waterloo. The many letters received showed in what esteem he was held alike by his own profession, by scientific men generally, and by peers, eminent lawyers, and others.

Many valuable lectures have been given under this memorial to Dr. Lettsom. I cannot but recognise that

those you have been good enough to listen to have fallen short of any great attainment. Still, perhaps the cases recorded may prove of some value to future workers and enable them to generalise to better purpose.

DELAYED CHLOROFORM POISONING: ITS NATURE AND PREVENTION.

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IN view of the importance of the condition itself and of the additional interest given to it by recent communications in THE LANCET, the conclusions come to by the present writer in dealing with the subject in the forthcoming edition of Allbutt's and Rolleston's "System of Medicine" may fittingly be drawn attention to at this time.

The credit of being the first to draw attention to cases of "delayed chloroform poisoning" belongs to Dr. Leonard G. Guthrie. In 1894 he reported nine cases in which death occurred within from ten hours to six days of operation performed under chloroform. The exact numbers of hours which elapsed between the operations and the deaths of the patients were 10, 12, 13, 16, 24, 27, 30, 53, and 150 respectively. In Case 10 recovery took place after symptoms of great gravity had lasted for nearly three days. The symptoms and clinical course noted in such cases were—after a period of 12 hours or so—profuse and repeated vomiting; the vomit eventually blood-stained and resembling the dregs of beef-tea, restlessness, excitement, delirium alternating with periods of apathy, jaundice occasionally, and unconsciousness deepening to coma. With the exception of the liver, the organs showed no particular change accountable for these symptoms. The liver in five out of the eight cases was markedly fatty—of a uniform pale fawn or buff colour, studded on section with pale purple spots around the intralobular veins. Microscopically, the liver cells were filled with fat, most abundant in the periphery of the lobule—the condition seeming to be one of extreme fatty infiltration rather than of fatty degeneration. Neither macroscopically nor microscopically did the appearances resemble those of acute yellow atrophy. The conclusions which he drew as to the cause of death were: (1) that the death was due to auto-intoxication; (2) that a fatty condition of the liver with functional disturbance existed before the operation; and (3) that chloroform and shock combined aggravated this fatty condition and thus loaded the system with alkaloids.

Dr. Guthrie's conclusions and views, as he states, did not meet with acceptance—the fatalities were held to be due to carbolic acid poisoning or to pulmonary embolism. In 1903 he published a second series of four fatal cases, three of them in children in which he was able to exclude carbolic acid and fatty embolism as the cause of death which he attributed to the action of chloroform on a morbidly fatty liver.

PATHOGENESIS.

The above pathological changes correspond with those that can be produced experimentally by chloroform and ether.[1] On comparing sections of the liver removed before and after chloroform anæsthesia, Stiles and McDonald found that while the former showed little or no fatty change, in the latter such changes were extreme. After administration of ether these changes were slight in comparison. Both in man and in animals individual idiosyncrasy must be held to play an important part to account for the fatalities in individual cases. According to Guthrie the unknown cause of this idiosyncrasy is a pre-existent and morbidly fatty condition of the liver which reduces the liver to the verge of inadequacy prior to the administration of the anæsthetic. Such a condition, it is pointed out, is common in rickety and poorly nourished children among whom this class of poisoning has been most frequently observed, and is doubtless aggravated by the cyclical vomiting accompanied by acetonuria so often met with in children to which Guthrie draws attention, and the symptoms of which, as shown by Brackett, Stone, and Low, are practically the same as those of a minor degree of post-anæsthetic poisoning. In the few cases of fatal cyclical vomiting in which a necropsy has been obtained the liver, kidneys, and other organs have shown fatty and degenerative changes precisely similar to those met with in cases of delayed anæsthetic poisoning. (Griffith, 1900; Langmead, 1905.) On the strength of these similarities Guthrie emphasises this fatty change in the liver and the acid intoxication which accompanies it as the determining factors responsible for the symptom-complex of this condition. The conditions in which it is likely to be met with are such as are known to be associated with fatty liver—e.g., sepsis, acute and chronic, rickets, and infantile paralysis which have been treated by over-fattening and under-exercise; probably also conditions such as alcoholism and certainly starvation and cyclical vomiting with acetonuria. In favour of the view that disturbance in fat metabolism plays some part in the pathogeny of this condition is the fact that acetonuria is a common sequel after anæsthesia. (Becker, 1905; Abram Hill, 1896) Abram Hill found it in 64 per cent. of cases, while Becker found that it was regularly produced in healthy subjects, especially in children.

To connect the symptom-complex of post-anæsthetic poisoning exclusively with disturbances in fat metabolism is, in my opinion, to exaggerate the importance of this change, and to under-estimate the importance of the other functional liver disturbances with which disturbance in fat metabolism is associated. As I have shown,[2] the acidosis accompanying increased fat metabolism becomes of grave pathogenetic significance when combined with diminished proteolytic activity, owing to inanition, deprivation of food, or recurrent vomiting. As the result of the diminished absorption of ammonia in the portal blood caused by such conditions the intracellular alkalinity of the liver cell is already at a low level. There then results first of all a serious interference with the proteolytic, antitoxic, and glycogenic functions of the liver (of which the post-anæsthetic sickness is a symptom) and the transference of fat to the liver in increased quantity from its depôts is a result. The acidosis which accompanies this increased fat metabolism depresses still further the intracellular alkalinity and proteolytic and antitoxic powers to the point when they are almost in abeyance. There then ensue the characteristic severe toxic cerebral symptoms of the condition which rapidly prove fatal.

On this view it will be seen that the disturbances in fat metabolism, evidenced by the fat changes after death and the acetonuria and acidosis during life, are thus, I consider, largely the results—not necessarily the causes—of the preceding disturbances in the other functions (proteolytic, antitoxic, and glycogenic) of the liver. To connect the striking and overwhelming symptoms of post-anæsthetic poisoning with fat metabolic disturbances alone is to overlook their most striking feature—viz., their toxic cerebral features. As I shall now show, the acidosis of fat metabolism becomes really important when it is combined with disturbance in proteolytic activity and glycogenic activity of the liver cell. This is the condition presented in the final stages of severe liver disease such as cirrhosis, in acute yellow atrophy, phosphorus poisoning, and chloroform poisoning.

DISTURBANCES CONNECTED WITH GLYCOGENESIS.

The functions of the liver in relation to the storage and distribution of the carbohydrates of the food are only second in importance to those discharged by it in relation to protein metabolism. The functional disturbances connected with glycogenesis manifest themselves: (1) *directly* by disorders—e.g., glycosuria and diabetes—connected with carbohydrate metabolism, absolute or relative efficiency of the liver in dealing with the carbohydrate material supplied to it in the food, or conveyed to it in the tissues; and (2) *indirectly* by effects which such disturbances have on the metabolism of fats and of proteins. The most obvious effect of the first class of disturbance is glycosuria. The effects of the latter show themselves by disturbances of fat metabolism or by disturbances of proteolytic and antitoxic functions.

Indirect effects of disturbance of glycogenesis on fat metabolism and proteolysis.—When carbohydrate metabolism is out of order the synthesis of fat is also disordered. For it is an important rôle of the body to synthesise fat from the carbohydrate which is not at once used up or converted into glycogen. Hence, next to fat carbohydrate is the most powerful fat-producer—a fact now definitely ascertained and

[1] Thiem and Fischer, 1889; Ostertag, 1889; Stiles and McDonald, 1904.

[2] See Allbutt's System, second edition, vol. iv.

applied extensively in therapeutics. The change is a gradual one and occurs in most cases only if carbohydrates greatly exceed the needs of the tissues. There is no conclusive evidence that in health this change occurs if carbohydrates are not in excess. In disease, however—e.g., diabetes—it is possible that sugar may be burnt off by becoming first converted into fat[3] by a conjoint process of reduction and synthesis akin to that which occurs in butyric acid fermentation. The site of this change is most probably the liver, since similar processes have been proved to occur in the liver after death.

Disturbances of glycogenesis, whether arising from defective storage or increased glycolytic changes, are therefore always attended by disturbances in fat metabolism, in the first instance by diminished formation of fat and later by increased call upon the fat already present in the body to take the place—for purposes of combustion and nutrition—of the carbohydrate material lost to the body. More or less wasting is thus a characteristic effect of all disturbances of glycogenesis. In the case of fats, the deficiency or loss of carbohydrates leads to the removal of fat from its deposits in the tissues back into the blood to all the organs requiring it but especially into the liver. The liver becomes loaded with enormous quantities of fat to the extent, it may be, of 70 per cent. of its bulk. This transference of fat involves therefore a condition of lipæmia met with in cases of diabetes which may in itself be sometimes a cause of disturbance in producing fat-embolism. It involves, however, what is more important—viz., an excessive metabolism of fats for purposes of combustion, and with this a corresponding excess of products of fat metabolism. Among such products are various acids, diacetic acid, acetone, β oxybutyric acid—the so-called acetone bodies. The greater part of these bodies have fatty acids as their immediate precursors, and the liver is the site of their formation from fat (and from proteid derivatives). The essential factor in causing acetonuria is the absence of proper carbohydrate metabolism. The effects on liver function of the "acidosis" thus produced are various. Some of them have already been seen in connexion with its metabolism of urea and ammonia. The most dangerous result is that shown in diabetic coma, the grave toxic symptoms of which are associated with the presence of these bodies. The body is able to protect itself up to a certain point against this increased production of acids—viz., by neutralising them with ammonia. This combines with the acids and is excreted in the urine to the amount even of from 10 to 12 grammes daily, instead of the average 0·5 gramme. Notwithstanding the protective power of the ammonia the alkalinity of the blood may become absolutely diminished, and then there follow the phenomena of acid-intoxication presented in cases of diabetic coma. Short of these extreme effects, the diminished alkalinity of the blood caused by increased formation of acids may in certain cases, as will presently be seen, involve grave disturbance of the proteolytic functions of the liver, to the extent even of becoming the main factor in determining the occurrence of the gravest of all liver disturbances—viz., the auto-digestion (autolysis) characteristic of acute yellow atrophy and of some cases of chloroform poisoning.

Both directly and indirectly defective glycogenesis may thus be responsible for some of the gravest disturbances, both functional and structural, to which the liver is subject.

1. Absence or deficiency of carbohydrate material (glycogen) in the liver cell involves on the one hand an increased destruction of protein material with consequent wasting of the body.

2. This increased proteolysis involves an increased formation of toxic products in increased quantity, with consequent increased liability to toxic effects producible by such products.

3. The absence of glycogen from the liver cell by diminishing the combustion processes interferes with the destruction of toxic products, and this involves a diminution in the antitoxic powers of the liver cell. The starving animal is more easily affected by poisons than the well-fed (glycogen rich) animal.

4. The loss of carbohydrate material caused by impaired glycogenesis (and the glycosuria of disease) involves extensive changes in fat metabolism—the withdrawal of fat from its peripheral depôts to the more centrally situated liver, where it is more immediately available for purposes of combustion and energy production. The increased metabolism of fats thereby necessitated involves an increased formation of acids and if long continued the "acidosis" thus occasioned may produce symptoms of acid intoxication of milder or severer degree (e.g., acetonuria and diabetic coma). It may even in favourable circumstances be the chief factor determining the onset of the severe structural autolytic changes characterising acute yellow atrophy, chloroform poisoning, and other severe liver conditions.

[3] Von Noorden, 1901; Naunyn, 1899.

DISTURBANCES CONNECTED WITH THE METABOLISM OF FATS.

Disturbances in fat metabolism play a far more important part in grave functional disorders of the liver than was formerly supposed.

A. *The physiology of fat metabolism.*—The neutral fats absorbed with the chyle remain in the blood for a brief period till they are selected for combustion or storage in the subcutaneous tissues, para-peritoneal spaces, and the liver. During fasting the fat streams from the depôts back into the blood to all the organs requiring it. A condition of "lipæmia" of the blood is therefore a constant condition and this becomes very manifest in phosphorus and phloridzin poisoning, in alcoholic intoxication, and in diabetic coma—conditions in which there is more or less widespread inanition, especially with deficiency of carbohydrates. Certain ferments have been found in the blood capable of splitting the fat and rendering it soluble. And ferments of this nature have been found in the liver. In these conditions, as has been shown by Rosenfeld (1895-97), an enormous passage of fat takes place from the fat deposits of skin and abdomen into the liver, and the latter becomes loaded with enormous quantities of fat (to the extent of 70 per cent. of its bulk). The distinctions formerly made between "fatty infiltration" and "fatty degeneration" no longer hold good. In both cases alike the fat is deposited in the cells; the form it takes—whether in fine granules or larger globules—is determined by the functional activity of the cell at the time the fat is taken up. This excessive storage of fat in the liver only occurs if the glycogen has disappeared from the liver, and it can be prevented if the animal be fed with substances, such as sugar, from which glycogen can be readily formed. This storage of glycogen and fat would thus appear to stand in a certain antithesis. Although in certain cases large quantities of fat may often be found along with extensive storage of glycogen—e.g., in the livers of Strassburg geese (Magnus Levy)—yet in general excess of fat in the liver denotes deficient glycogenesis. The storage of fat in the liver may be explained in two ways. The first is that the liver must first transform the fat molecule in some way before it can be consumed by the cells (Nasse)—for example, possibly into carbohydrates. The second is that the storage of fat in the liver is a reserve readily available to meet any sudden call upon the metabolism, as, for example, in violent movements. The suggestion is that the fat can much more quickly and easily pass from the centrally situated internal and vascular liver than from the cells of ordinary adipose tissue. According to this explanation, the liver must have the task of placing at the disposal of the body the material necessary for combustion, both from its glycogen and its fat deposits, on any sudden increase of the demand for energy. (Von Noorden.)

B. *The pathology of fat metabolism.*—The disturbances that arise in connexion with fat metabolism in the liver are evidenced chiefly by the excretion of acetone bodies—viz., acetone, aceto-acetic acid, and β-oxybutyric acid, and by the condition of acidosis to which their formation in excess gives rise. Of these bodies only acetone can be found in the urine in health (about one to three centigrammes daily). The conditions under which these bodies are increased are essentially those in which the oxidising powers of the body are reduced by some notable deficiency or absence of carbohydrates from the food. Deprivation of food or the exclusion of carbohydrates from the food causes acetonuria without exception in the case of man, also in children, also during pregnancy and labour, also after injury of the central nervous system, also after the administration of narcotics. In all these cases the administration of carbohydrates, starch and especially sugar, removes within a few days this form of acetonuria. If it be allowed to continue there also occurs an excretion of aceto-acetic acid and oxybutyric acid. The source of these

acids is the fat of the body. In general it must be emphasised that an increase of the fat in food has no material influence on the formation and elimination of the acetone bodies. This depends in the first place upon the internal condition of the cell, and this condition is affected by a deficiency of carbohydrates (and therefore in the liver by deficiency of glycogen). The extent to which the metabolism of fats is affected in diabetes and diabetic coma may be judged from the fact that no less than 342 grammes have been found in the urine in the course of three days (Magnus Levy). The fats therefore yield the chief material necessary for the formation of acetone bodies and their formation in any notable quantity is in the first place caused by lack of carbohydrates. They are not formed in the intestine. They may possibly be formed in all organs but the chief seat of the formation is the liver and muscles.

Disturbances in hepatic fat metabolism are thus largely connected with deficiency of glycogen whether arising from want of carbohydrates (as in starvation) or from excessive loss of sugar (as in diabetes). The conditions in which increased acidosis arises are those especially affecting glycogenesis, such as poisoning with carbonic oxide, extirpation of the pancreas, poisoning with phloridzin, chloroform, exclusive feeding on animal fats, and lastly severe cases of diabetes.

DISTURBANCES OF PROTEOLYTIC AND ANTITOXIC FUNCTIONS.

The symptoms vary according to the degree with which the proteolytic functions are affected simultaneously.

1. If these latter are fully maintained the symptoms produced in severest cases are those of diabetic coma. In these conditions, owing to the absolute deficiency of carbohydrate and the excessive movement of fat from the tissues to the liver the acidosis is absolutely excessive. The proteolytic functions of the liver are, however, fully maintained.

2. The chief effect of such disturbances of fat metabolism arises when an acidosis of lesser degree is combined with disturbance of proteolytic activity of the liver cell. This is the condition presented in the final stages of severe liver disease such as cirrhosis, acute yellow atrophy, phosphorus poisoning, or chloroform poisoning. A disturbance in fat metabolism (with increased acidosis) which would not affect a fairly healthy liver cell becomes then much more important. At a time when the intracellular alkalinity of the liver cell is already at a low level (owing to inanition, deprivation of food, and diminished absorption of ammonia in the portal blood consequent thereon) the additional acidosis arising from excessive fat metabolism may, as already described, suffice to lower the alkalinity below the point necessary to keep its own digestive proteolytic ferments in check. There then results auto-digestion or autolysis of the liver cell by its own ferments, with complete arrest of all its functions. The clinical picture then presented in slighter or severe degree is not that of acidosis, as in diabetic coma, but that of acute yellow atrophy and chloroform poisoning—viz., essentially one due to the abolition of all the antitoxic functions of the liver. The symptoms largely resemble those produced when the portal blood is conveyed directly into the general circulation by means of an Eck's fistula.

CONCLUSION.

This conclusion which one thus reaches as to the relation of disturbances in fat metabolism to the severest forms of liver disturbance represented by acute yellow atrophy and chloroform poisoning is, in my judgment, of great practical importance. The vomiting which occurs after administration of anæsthetics is not of nervous origin; but it is, I consider, essentially toxæmic, due to the profound depression of liver function with consequent diminution in its antitoxic function during the period of the administration. This depression will be the greater if a liver already weakened by disease or by poor nutrition be further unduly weakened by food having been withheld for many hours before the administration. This enforced abstention from food before administration of an anæsthetic may thus in individual cases be carried too far, and it is, in my opinion, largely responsible for the fatal effects of delayed chloroform poisoning in exceptional cases. Such effects could in all probability be completely prevented if, instead of withholding food, particular care was taken that the patient had always a very nutritious and easily digestible meal, well-sweetened, two or three hours before the operation.

Harley-street, W.

OBSERVATIONS ON THE BACTERIOLOGY OF SCARLET FEVER.

BY HAROLD KERR, M.D. EDIN., D.P.H. CAMB.,
ASSISTANT MEDICAL OFFICER OF HEALTH OF THE CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

THE following are the results of an investigation of the organisms present in the throats, noses, &c., of a series of 160 cases of scarlet fever admitted to the wards of the Bury and District Joint Hospital during the years 1906–07, together with an examination of the throats of 40 healthy individuals.

Throat.—The first step was the general classification of organisms found in cultures on blood serum from swabs taken from the pharynx and fauces; in the case of the hospital patients these were made immediately on admission. The colonies which appeared included streptococci, diplococci, staphylococci, bacilli, and yeasts in various combinations, and their frequency was as follows:—

Organism.	Scarlet fever.	Healthy.
Streptococci	134, or 84 per cent.	33, or 83 per cent.
Diplococci	125, or 78 ,,	35, or 88 ,,
Staphylococci	98, or 61 ,,	19, or 48 ,,
Yeasts	16, or 10 ,,	3, or 8 ,,
Bacilli	77, or 48 ,,	20, or 50 ,,
Bacillus of Klebs-Löffler	14, or 9 ,,	—

Among the "bacilli" are included all forms of "diphtheroid," only the true diphtheria bacillus being separately classified.

In this list the close correspondence between the two columns is very striking, the only point of marked difference being the more frequent occurrence of staphylococci and diphtheria bacilli in scarlet fever. In none of these patients was there any clinical sign or symptom of diphtheria.

Nasal discharge.—During the same period the purulent nasal discharge was examined in 67 cases of scarlet fever and there were found:—

Streptococci	in 28,	or 42%	Bacilli	in 41,	or 61%
Diplococci	,, 34,	or 51%	Bacillus of Klebs-Löffler		
Staphylococci	,, 50,	or 75%		in 25,	or 37%
Yeasts	,, 1,	or 2%			

Here the diphtheria bacillus occurred more frequently than in the throat, while streptococci were less frequent and staphylococci more frequent.

Ear discharge.—The ear discharge was examined in 17 cases of scarlet fever, with the following result:—

Streptococci	appeared in 7, or 41%	Bacilli	appeared in 8, or 47%
Diplococci	,, ,, 10, or 59%	Bacillus of Klebs-Löffler	
Staphylococci	,, ,, 11, or 65%		appeared in 5, or 29%
Yeasts	,, ,, none.		

Thus streptococci and diplococci occurred in much the same proportion of cases in the ear as in the nose, and in considerably less than in the throat, while staphylococci were more frequent than in the throat and less frequent than in the nose. The diphtheria bacillus was relatively much more common than in the throat, though not quite so common as in the nasal discharge.

Pus.—On opening a cervical gland abscess in six cases the pus gave a pure culture of streptococci in each, as also in two cases in which the pus was obtained from the mastoid antrum.

Blood.—Cultures (both solid and liquid) were made from the blood of six cases on the second day of the disease and a streptococcus with chains of from six to ten individuals was obtained from one, a diplococcus without chain formation from another, while the remaining four gave no growth.

The occurrence of streptococci in pure culture in so true secondary conditions as the adenitis and mastoid infections, taken together with the frequency of their occurrence in the throat, is strong evidence that they play an important etiological part in at least the secondary symptoms of scarlet fever.

Examination of streptococci by Gordon's tests.—The next step undertaken was a full and detailed examination of the streptococci obtained from scarlet fever cases (chiefly from the throat, but also from the nose, ear, and mastoid) and from the throats of healthy individuals and others suffering

Table showing Cultural Reactions of Streptococci from Various Sources, as described in the Text.

No.	Andrewes's and Horder's classification.	Reaction to Gordon's tests.											Growth on gelatin.	Morphology.	Scarlet fever.		Healthy.		Other diseases.	
		Litmus milk.		Neutral red.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Coniferin.	Mannite.	Nitrate.			No. of specimens.	No. of cases.	No. of specimens.	No. of cases.	No. of specimens.	No. of cases.
		Acid.	Clot.																	
1	*I., Ia*	—	—	—	+	+	—	—	+	(—)	—	—	±	M. to L.	1	1	1	1	2	2
2	*Ic*	+	—	—	+	+	—	—	—	(—)	—	—	±	C. & M. to L.	5	4	3	3	2	2
3	*If*	—	—	—	—	+	—	—	—	(—)	—	—	+	M.	—	—	1	1	—	—
4		—	—	—	—	—	—	—	—		—	—	+	M. to L.; C.	—	—	1	1	2	1
5		—	—	—	+	—	+	—	—		—	—	±	M. to L.	1	1	2	2	—	—
6		+	—	—	+	—	+	—	—		—	—	—	L.	1	1	1	1	—	—
7	*Ih*	—	—	—	+	—	—	—	—	(—)	—	—	+	M. and Liss.	1	1	1	1	—	—
8	*Ii*	+	—	—	+	+	—	—	+	(+)	—	—	—	M. to L.	1	1	—	—	1	1
9	*II., 2d*	+	+	—	+	+	—	—	+	(±)	—	—	—	B. to M.	1	1	1	1	—	—
10	*2f*	+	+	—	+	+	+	—	+	(+)	—	—	+	B.	—	—	1	1	—	—
11	*2i*	+	+	+	+	+	+	—	+	(+)	—	—	+ Liq.	B.	—	—	1	1	—	—
12	*2l*	+	—	+	+	+	+	—	+	(—)	—	—	+	M. to L.	—	—	1	1	—	—
13		+	—	+	+	+	+	+	—		—	—	—	M. to L.	—	—	—	—	1	1
14	*III., 3a*	+	+	+	+	+	+	—	—	(—)	—	—	±	L. to Liss; C.	4	3	1	1	1	1
15		+	+	+	+	—	+	—	—		—	—	+	C.	1	1	—	—	—	—
16	*3b*	+	+	+	+	+	—	—	—	(—)	—	—	±	M. to Liss; C.	7	4	1	1	7	3
17		+	+	+	—	+	—	—	—		—	—	—	Liss.	—	—	—	—	1	1
18	*3c*	+	+	+	+	—	—	—	—	(—)	—	—	±	M. to Liss; C.	8	6	—	—	6	3
19		+	+	—	+	—	—	—	—		—	—	±	L. to Liss; C.	4	4	2	2	1	1
20		+	+	+	—	—	—	—	—		—	—	+ Liq.	L.	—	—	1	1	1	1
21		+	+	—	—	—	—	—	—		—	—	±	M. to L.; C.	1	1	2	2	—	—
22		—	+	—	+	—	—	—	—		—	—	±	L. to Liss.	3	2	—	—	—	—
23		—	+	—	—	—	—	—	—		—	—	±	L. to Liss.	2	2	—	—	—	—
24	*3d*	+	+	—	+	+	—	—	—	(—)	—	—	+	M. to Liss; C.	6	4	5	4	6	4
25	*3e*	+	+	—	+	+	+	—	—	(—)	—	—	±	M. to Liss; C.	6	6	4	4	1	1
26	*3f*	+	+	—	+	+	—	—	+	(±)	—	—	±	M. to L.; C.	7	7	1	1	4	1
27		+	+	—	+	+	—	—	+		—	—	+ Liq.	L.	—	—	—	—	1	
28		+	+	—	+	+	—	+	—		—	—	+	L.	1	1	—	—	—	—
29		+	+	—	—	+	—	—	—		—	—	+	M. to L.	2	1	—	—	—	—
30		+	+	—	—	+	+	—	—		—	—	—	L.	—	—	—	—	1	1
31	*3i*	+	+	—	+	+	+	—	+	(+)	—	—	±	M. to Liss; C.	5	4	5	4	—	—
32	*3j*	+	+	+	+	+	—	—	+	(—)	—	—	±	M. to Liss; C.	5	4	—	—	2	2
33		+	+	+	+	—	—	+	—		—	—	+	Liss.	1	1	—	—	—	—
34		+	+	+	+	—	—	—	+		—	—	—	L.; C.	1	1	—	—	1	1
35	*3k*	+	+	+	+	+	+	—	+	(±)	—	—	±	M. to L.	6	4	2	2	3	2
36		+	+	+	+	+	+	+	+		—	—	—	M. to Liss.	2	2	—	—	1	1
37		+	+	+	+	+	+	+	—		—	—	—	M. to L.	1	1	—	—	2	1
38		+	+	+	+	+	—	+	+		—	—	+	L.	1	1	—	—	—	—
39		+	+	+	+	+	—	+	—		—	—	+	L.	1	1	—	—	—	—
40		+	+	+	+	—	+	—	+		—	—	—	Liss.	1	1	—	—	—	—
41		+	+	+	—	—	+	+	—		—	—	—	L.	1	1	—	—	—	—
42		+	+	+	—	—	+	—	—		—	—	+	M.	—	—	1	1	—	—
43	*3m*	+	+	—	+	+	—	+	—	(—)	—	—	—	B. to M.	—	—	1	1	—	—
44		+	+	—	+	+	—	+	+		—	—	+ Liq.	C.	—	—	1	1	—	—
45	*3n*	+	+	—	+	—	—	+	—	(—)	—	—	±	Liss.	1	1	—	—	1	1
46		+	+	—	+	—	+	—	—		—	—	—	L.	1	1	—	—	—	—
47		—	+	—	+	—	+	+	—		—	—	+	L.	1	1	—	—	—	—
48		—	+	—	—	—	—	+	—		—	—	+	L.	1	1	—	—	—	—
49	*3o*	—	—	+	+	—	+	—	—	(—)	—	—	—	M.	1	1	—	—	—	—
50		—	—	+	—	+	—	—	—		—	—	+	Liss.	1	1	—	—	—	—
51	*3s*	—	—	+	+	+	—	—	—	(—)	—	—	+	M.	—	—	1	1	—	—
52		+	—	+	+	+	—	—	—		—	—	—	L.	1	1	—	—	—	—
53		+	—	+	+	+	+	—	—		—	—	—	C.	1	1	—	—	—	—
54	*3t*	+	—	+	+	+	—	—	+	(±)	—	—	—	M. to L.	2	2	1	1	—	—
55	*IV.*	+	+	+	+	—	—	+	+		+	—	—	Liss.	—	—	—	—	1	1
56		+	+	+	+	—	—	—	—		+	—	+	Liss.	1	1	—	—	—	—
57		—	+	+	+	—	—	—	—		+	+	+	L.	—	—	1	1	—	—
58	*4b*	+	+	—	+	+	+	+	+	(—)	+	—	+	M.	—	—	1	1	—	—
59	*4c*	+	+	—	+	+	+	—	—	(—)	+	—	—	M. to L.	—	—	1	1	—	—
60		+	+	—	+	+	+	—	+		+	—	+	C.	—	—	1	1	—	—
61		+	+	+	+	+	+	+	—		+	—	—	L.	1	1	—	—	—	—
62		+	+	—	+	—	—	—	—		+	—	±	L.	—	—	—	—	1	1
63		—	—	—	+	—	+	—	—		+	—	—	L.; C.	—	—	2	2	—	—
64		—	—	—	—	+	+	—	—		+	—	+	L.	—	—	1	1	—	—
															100	27	50	20	50	12

from catarrhal and diphtheritic affections. In all 200 specimens were taken from the following sources for comparison. I. 100 separate specimens from 27 scarlatinal patients, viz.:—80 specimens from 26 different throats, 6 from 2 different noses, 8 from 2 discharging ears (different patients), and 6 from 2 different cases of mastoid infection. II. 50 specimens from 20 different healthy throats. III. 50 specimens from 12 cases of other diseases, not scarlet fever—viz: 30 specimens from 6 different diphtheria throats, 13 from 5 different catarrhal throats, and 7 from 1 case of follicular tonsillitis with abscess formation. Swabs were taken from each case and nasgar plates inoculated from them and incubated at 37° C. for 24 hours.

The resultant colonies were then examined macroscopically and under the low power; subcultures of different colonies were made in lemco bouillon at 37° C. for 48 hours, and the growth examined macroscopically and microscopically. On finding streptococci in the bouillon, these were re-subcultured after Mervyn H. Gordon's method [1] in the following media: (1) Litmus milk; lemco-litmus broth containing (2) saccharose, (3) lactose, (4) raffinose, (5) inulin, (6) salicin, (7) mannite, and (8) potassium nitrate, all in 1 per cent. solution, and (9) neutral red broth, the last anaerobically in Buchner's tubes, all at 37° C.; and (10) on gelatin at 20° C. Coniferin was unfortunately unobtainable either in the home or foreign market. Incubation of the subcultures was maintained for seven days and record then made of the decomposition of the various sugars from the colour of the media, &c. As far as possible the investigation was made to correspond, for the sake of commparison, with that of Dr. F. W. Andrewes and Dr. T. J. Horder, described in THE LANCET of Sept. 15th, 22nd, and 29th, 1906.

Taking into account only the morphological differences between individual specimens as seen in the growth in bouillon, the following classification may be made according to the length of the chains, percentages alone being stated:—

Chains.	Healthy.	Scarlet fever.	Other conditions.
Longissimus (Liss)	8	20	18
Longus (L.)	34	48	38
Medius to Longus (M. to L.)... ...	14	14	10
Medius (M.)	22	8	8
Brevis to Medius (B. to M.)	2	—	—
Brevis (B.)	4	1	—
Conglomeratus (C.)	16	9	26

The longer forms of streptococci then appear to be relatively more numerous in the diseased than in the healthy conditions, the short forms appearing relatively more numerous in the healthy throats. The results pointed to what Andrewes and Horder [2] referred to as a replacement of the common short forms by long varieties quite early in the disease. It will be noticed that the conglomerate forms, described by Gordon as being peculiar to scarlet fever, were found much less frequently in scarlet fever than in health, and very much less frequently than in other catarrhal conditions of the throat.

In classifying the specimens the method adopted by Andrewes and Horder was as closely adhered to as possible. Macroscopically the appearances were generally similar to those noted by the same observers. The accompanying large table summarises the results obtained from the subcultures, arranged on the system suggested by Andrewes and Horder. Where one of the present series corresponds with one of theirs, their classification (Group and Variant) numbers are indicated in italics, and also their result with the coniferin broth medium in brackets. Decomposition of the media is indicated in the table by a positive (+) sign and no visible reaction by a negative (−). Two points of importance which do not appear in the table are: (1) that two or more specimens from a single case often differ from one another in only a single reaction; and (2) that no coincidence was found in any scarlet fever case between organisms obtained from the ear when discharging or from the mastoid antrum and any that were obtained from the throat. In one case an organism was obtained from the nasal discharge which gave the same reactions as one of those found in the throat. It will be seen that out of 200 specimens 64 variants were obtained.

The following table shows the different distribution of the variants (percentages only) in the groups suggested by Andrewes and Horder:—

Group.	Healthy.	Scarlet fever.	Other diseases.
I.	20	10	14
II.	8	1	2
III.	58	87	80
IV.	14	2	4

It is obvious that very little can be learnt for purposes of diagnosis from these results, taking the reactions in their series. Subjoined is a table of percentages comparing the reactions of organisms from the different sources to the individual tests, and it is also obvious that they are equally valueless for the purpose. Mannite alone is more readily decomposed by organisms from healthy throats than from diseased, but there is no test among them by which scarlet fever can be distinguished from the other diseases.

Test.	Healthy.	Scarlet fever.	Other diseases.
Milk pink	78 per cent.	88 per cent.	92 per cent.
Milk clot	68 ,,	83 ,,	84 ,,
Neutral red ...	22 ,,	48 ,,	54 ,,
Saccharose... ...	86 ,,	92 ,,	90 ,,
Lactose	72 ,,	68 ,,	72 ,,
Raffinose	50 ,,	34 ,,	20 ,,
Inulin...	6 ,,	12 ,,	12 ,,
Salicin...	34 ,,	33 ,,	32 ,,
Mannite	14 ,,	2 ,,	4 ,,

With a much smaller number of specimens of streptococci (33) from scarlet fever cases, Andrewes and Horder obtained results with which the above correspond most strikingly. As a means therefore of diagnosis in scarlet fever, Gordon's tests must be regarded as of little value in the present state of our knowledge of the etiology of the disease. If the tests are of real differential worth for the various strains of streptococci—and the remarkable constancy shown by different generations of individuals to them, in my own experience, indicates that they are—we find ourselves faced by the fact that they fail absolutely to point to any particular strain as being even more frequently present in scarlet fever than in other catarrhal and inflammatory conditions of the throat. That the infecting agent is present in the pharyngeal and faucial mucus is absolutely all that has been established for certain regarding the causation and source of the disease. If none of the streptococci in the throat are causative of the primary condition some other agent must have made it possible for them to obtain entrance to the tissues in order to produce the secondary complications. It was shown above that the staphylococci are relatively increased in scarlet fever. Possibly a careful examination of these, on similar lines to that described for the streptococci, might reveal something of importance.

I am indebted to Dr. A. E. Brindley, medical superintendent of the Bury and District Joint Hospital, for permission to publish the above.

Newcastle-upon-Tyne.

[1] Report of the Medical Officer to the Local Government Board, 1903-04.

[2] A Study of the Streptococci Pathogenic for Man, THE LANCET, 1906, vol. ii., pp. 708, 775, and 852.

UNIVERSITY COLLEGE HOSPITAL.—The annual general meeting of the supporters of this hospital was held on March 26th, under the presidency of Mr. Henry Lucas, treasurer to the charity. The report on the work of the hospital during the past year stated *inter alia* that owing to lack of means the committee has been unable to open a ward containing 24 beds which should be available for the sick poor; in other words, about 350 patients annually, many requiring immediate treatment in the wards, have to be refused admission. An additional annual expenditure of about £1200 would be required to keep the ward open, and the committee has not felt justified in incurring this further liability, when in order to meet the deficiency in income it has had to trench upon its small invested funds by the realisation of £1500 Consols, and this notwithstanding that it has had to devote to purposes of current expenditure legacies which in more prosperous times could have been invested. The committee urgently appeals to the benevolent to do their utmost to relieve it from the financial anxieties and difficulties with which it is constantly faced, as it is obvious that only by strenuous efforts on the part of everyone interested in the welfare of the hospital can its efficiency be maintained.

NOTE UPON THE TUBERCULO-OPSONIC INDEX OF THE URINE AND SWEAT IN HEALTH AND IN TUBERCULOUS DISEASE.

BY JAMES MILLER, M.D. EDIN.

ANYONE engaged in opsonic work cannot fail to have been struck by the marked variations in the opsonic index from day to day in the case of tuberculous patients in particular. Reference to Chart 1, which is a portion of a record extending over a period of several months, conveys at a glance the marked variations in the tuberculo-opsonic index which occur even in a moderately early case of pulmonary tuberculosis—a case looked upon as curable. Again, to take a surgical case—one with considerable abscess formation. The day preceding the date of operation the tuberculo-opsonic index was found to be 0·8; the day after operation the index was 2·8; two days later it was found to have fallen to 1·0; and on the fourth day after operation it stood at 1·1. In thinking over this matter the question spontaneously arose in my mind, How is this difference to be accounted for? What has become of the quantity of anti-bacterial substance in the blood which is represented by the difference between the indices of 2·8 and 1·0? It was with the object of endeavouring to acquire some light upon this point that I proceeded to make the following observations upon the opsonic index of the urine and blood serum of a healthy person and of one who was suffering from chronic pulmonary tuberculosis, and supplemented them by making a few observations on the opsonic index of the sweat in other acute cases of the same disease. At the outset I encountered the difficulty in obtaining estimates of the opsonic content of urine of high specific gravity which Wright had previously noted in working with salt solutions of high concentration—viz., the elimination of phagocytosis either to a large extent or completely. Therefore, when the specific gravity of the urine was higher than 1008 it was found necessary to reduce it to that figure before the opsonic content could be accurately measured. The figure, 1008, was taken as being approximately the specific gravity of normal saline solution. This reduction of the specific gravity can be done in either of two ways. In the first place one may add a sufficient quantity of distilled water to reduce it to the required level (1008), a method of reduction which is open to the disadvantage that it also reduces the opsonic value of the fluid. In the second place, the specific gravity may be reduced by dialysis, by which means practically the whole of the salts and urea may be removed (by this method the amount of urea present was reduced to 0·1 per cent. to 0·05 per cent.). Both methods were employed and as the results which they yielded differed materially it has been thought desirable to record both.

My first observations were made upon the urine and blood serum of a healthy person, the urine being prepared by dilution, and in a smaller number of instances by dialysis. In Chart 2 is shown a record of the observations made. It shows (1) the specific gravity of the urine each day before reduction; (2) the opsonic content of the reduced urine, indicated by the interrupted line; and (3) the opsonic content of the blood serum indicated by the straight line at 1. The points which arrest attention are firstly the considerable quantity of tuberculo-opsonic substances in the urine, indeed (if we take into account the fact that the sample of urine had been diluted in many instances by more than twice its bulk) the opsonic content of the urine frequently greatly exceeds the proportion contained in the blood serum; and secondly, that the amount of opsonin in the urine was subject to considerable fluctuations. The next step was to note the opsonic index of samples of the same urine which had been dialysed. The results of such examinations also appear on Chart 2 marked by an encircled dot. We are in this way in a position to compare the opsonic indices of the blood serum, of the diluted urine, and of the dialysed urine of the same day in a series of occasions. On one occasion—day 43—the difference is very marked, the diluted urine giving an index of 1·2 while the dialysed urine gave an index of 3·66.

Pursuing the same line of investigation I next employed the urine and blood serum obtained from a person suffering from pulmonary tuberculosis (chronic fibroid form), the comparison being made with the same healthy standard as was employed in the first case represented by line 1. And for the benefit of those who may note that the opsonic curve of the blood serum is not by any means typical of a case of chronic tuberculosis it may be stated that the index in this case had previously been raised by a series of inoculations of

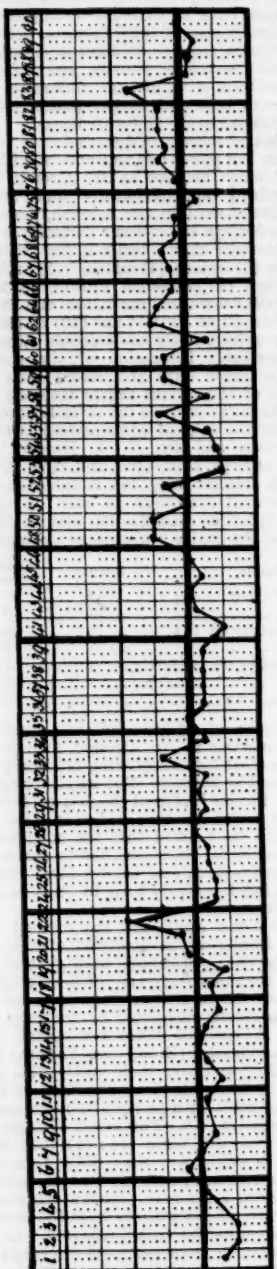
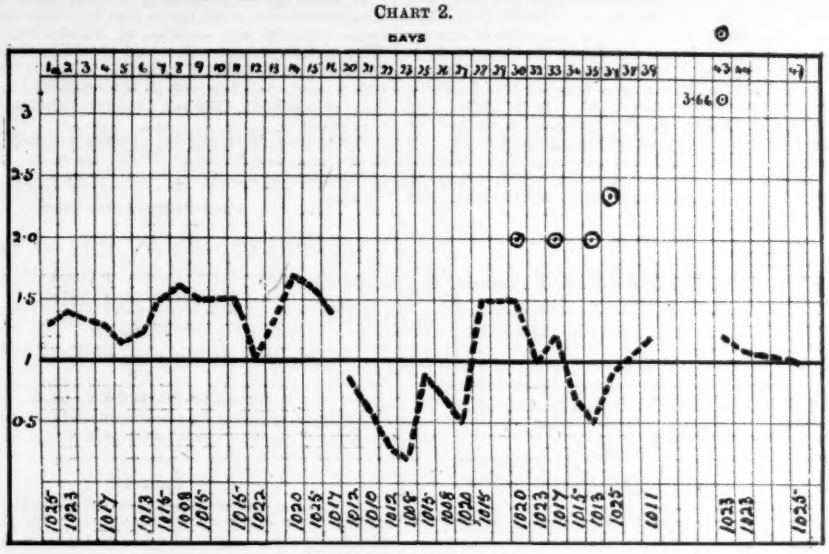


CHART 1.

Variations in the tuberculo-opsonic index observed in a case of pulmonary tuberculosis undergoing sanatorium treatment without the employment of vaccine.

tuberculin guided by systematic observations of the opsonic index of the blood. Taking our facts in the same order we note in Chart 3 the evidence obtained from diluted urine: firstly, that the opsonic index of this urine, unlike

CHART 2.



Opsonic chart of urine in health.

CHART 3.

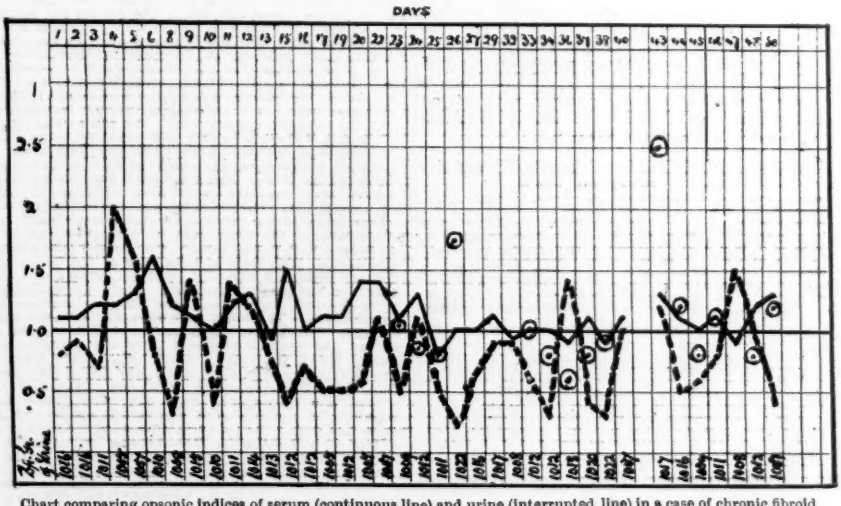
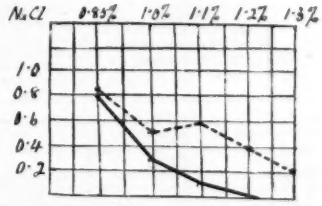


Chart comparing opsonic indices of serum (continuous line) and urine (interrupted line) in a case of chronic fibroid pulmonary tuberculosis.

that of the healthy person's urine, was usually found to be lower than that of the blood (out of 50 estimations there are only six exceptions); secondly, that it was for the most part lower than the opsonic index of a healthy person; and thirdly, that frequently a rise in the opsonic index of the patient's urine was associated with a fall in the opsonic index of the blood serum and *vice versâ*. This feature was present in 20 out of 50 consecutive observations. When the urine was dialysed and then examined the same phenomenon—viz., rise in the opsonic index—was present as had been remarked previously in the case of the healthy person, with this difference, that the rise was not nearly so marked nor so constant as in the case of the healthy individual.

Having been prevented from pursuing my inquiry in regard to sweat so far as I had intended, the data need not be set forth in detail. It may be sufficient to record that a number of observations on the sweat of persons suffering from acute pulmonary tuberculosis has been made and that the samples were in every instance found to contain tuberculo-opsonic substances, sometimes in surprisingly large amount. Compared with the opsonic index of the blood serum of a healthy person the samples of sweat were found to show indices ranging from 0·8 to 1·3.

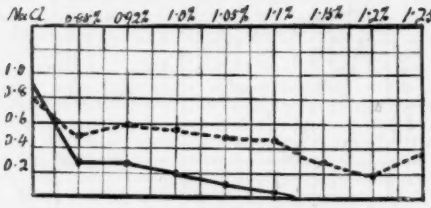
CHART 4.



Diluted heated urine. Tuberculous urine index is shown by the dotted line and healthy urine by the continuous line.

In attempting to draw conclusions from the foregoing observations it might reasonably be objected that these excretions which were examined did not contain opsonic substances but that the results obtained were due entirely to spontaneous phagocytosis. With the object of ascertaining to what extent this objection was founded the following further experiments were undertaken. In a paper read before the Royal Society Wright indicated a method by which spontaneous phagocytosis may be eliminated—viz., by the use of salt solutions of high concentration. That method has been adopted to meet the objection which might be raised in the present instance. The experiments were conducted as follow.

CHART 5.



Dialysed heated urine. Dotted line, tuberculous urine; continuous line, healthy urine.

Influence of the salt content (of the fluid environment of the leucocyte) upon the tuberculo-opsonic index of heated urine.—The urine was first heated at 60° C. for ten minutes, cooled, and then diluted to a specific gravity of 1008. Phagocytic counts were obtained from films prepared from phagocytic mixtures containing a double volume of diluted (or dialysed) heated urine, a double volume of washed corpuscles, a single volume of tubercle bacilli suspension (in 0·85 per cent. NaCl solution), and in each case a single volume of a solution of sodium chloride of progressively increasing strength. Charts 4 and 5 and Tables I. and II. show the results obtained (*a*) with diluted heated urine and (*b*) with dialysed heated urine. In each instance normal healthy urine and urine from tuberculous subjects are compared.

TABLE I.—*Tuberculo-opsonic Indices. Results obtained with Diluted Heated Urine.*

Salt (NaCl) content of the phagocytic mixtures.	Normal urine of specific gravity 1025, heated for ten minutes at 60° C., then cooled, and *diluted* to specific gravity 1008.	Pooled urine (of nine tuberculous patients) of specific gravity 1020, heated for ten minutes at 60° C., cooled, and *diluted* to specific gravity 1008.
0·85 per cent.	0·8	0·83
1·0 ,,	0·35	0·5
1·1 ,,	0·1	0·6
1·2 ,,	0·0	0·3
1·3 ,,	—	0·2

TABLE II.—*Tuberculo-opsonic Indices. Results obtained with Dialysed Heated Urine.*

Salt (NaCl) content of the phagocytic mixtures.	Normal urine of specific gravity 1025, heated for 10 minutes at 60° C., then cooled, and *dialysed* of nearly all its salts and urea.	Pooled urine (of nine tuberculous patients undergoing tuberculin treatment) of specific gravity 1020, heated for ten minutes at 60° C., cooled, and *dialysed* of nearly all its salts and urea.
0·56 per cent.	0·9	0·8
0·85 ,,	0·3	0·5
0·925 ,,	0·3	0·6
1·0 ,,	0·2	0·56
1·05 ,,	0·1	0·5
1·1 ,,	0·06	0·5
1·15 ,,	—	0·3
1·2 ,,	—	0·2
1·25 ,,	—	0·35

It seems to be abundantly evident from the foregoing observations and experiments that the excretions—urine and sweat—contain anti-bacterial or bacteriotropic substances. Why such important substances should be thrown out in the excretions is a difficult problem, unless it be that being specific and not required in the ordinary functions of the cells of the body, they are therefore eliminated as foreign substances.

For the supply of clinical material required for the work of this paper my thanks are chiefly due to Dr. David LAWSON, of Nordrach-on-Dee.

Glasgow.

OBSERVATIONS ON THE OPSONINS, WITH SPECIAL REGARD TO LUPUS VULGARIS.

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(*Concluded from page 923.*)

PART II.

IN the first part of this paper the general principles of opsonic determination were considered. We shall now proceed to describe a series of cases of lupus in the treatment of which tuberculin vaccinations were employed regularly.

I.—*Cases of Long Standing.*

CASE 1.—**L. W.** (Curve 11). The patient was an unmarried man, 20 years of age, whose brother also suffered from lupus vulgaris and was cured by the Finsen treatment. The patient had suffered from lupus for six years, and had been treated with ointments and freezing with chloride of ethyl until five years ago when he was admitted into the Finsen Light Institute, and from 1902 to 1906 was there treated with a total of 860 sittings. The mucous membranes were treated with the galvano-cautery. In spite of these energetic measures the disease relapsed constantly, became more extended, and assumed a malignant type; we therefore at the close of 1906 stopped the light treatment. On Feb. 9th, 1907 his condition was as follows The whole nose, with the exception of the root, was much swollen, and presented fungous nodules, several of which were ulcerated. There was only a small defect. The affection extended two centimetres on both cheeks. On the left cheek near the corner of the mouth there was a large ulcer measuring 3 by 1½ centimetres; there was also a smaller ulcer near the right corner. The upper lip was scar-like. The prolabium was partly destroyed by an ulceration which extended on the mucous membrane. There were extensive ulcerations in the vestibulum on both sides and on the mucous membrane in the nasal cavity On the soft palate there was a small granulation. The mucous membrane of the pharynx was swollen but not distinctly ulcerated. The epiglottis was scar-like but the edge was swollen and ulcerated. There was swelling of the plicæ aryepiglotticæ, and there were small ulcerations on the plicæ ventriculares. The lungs were normal. T.R. treatment was commenced. The dates of the injections of T.R. and the doses were as follows (the fractions represent parts of a milligramme): Feb. 9th, 1/4000; March 3rd, 1/4000; March 15th, 1/2000; March 26th, 1/2000; April 9th, 1/500; April 22nd, 1/250; May 13th, 1/250; June 4th, 1/250; July 13th, 1/250; August 7th, 1/250; and August 23rd, 1/250; making a total of 11 injections. Sept. 9th: The disease had since the beginning of the treatment become distinctly worse, and was now worse than ever. The nose was affected *in toto* with confluent ulcers on both alæ and on the tip. The affection had extended into the left corner of the eye and on the left upper eyelid. On the cheeks it had spread two centimetres further sideways. At both corners of the mouth and on the upper lip there was a widespread ulceration. The ulcers in the cavity of the nose had also extended further. On the soft palate there were small ulcers which were spreading on the arches of the palate and on the wall of the pharynx. The state of the throat remained as it was on Feb. 9th. The lungs were normal. The urine was normal.

CASE 2.—**H. J.** (Curve 3). The patient was an unmarried man, 24 years old, who had been suffering from lupus vulgaris for eight years. He was admitted into the Finsen Light Institute seven years ago and was treated from 1900 to 1906 with 1126 sittings. The mucous membranes were treated with the galvano-cautery. The affection several times got better, but relapses occurred constantly and a fistula was established from the left vestibulum through the tip of the nose; this fistula did not heal up in spite of energetic treatment, and nodules constantly made their appearance in the circumference and on the cheeks. On March 3rd, 1907, there was on the nose only a little infiltration, but there were scars and considerable defect of the apex and the right ala nasi. On the tip of the nose there was a perforation into the nasal cavity, and in the circumference of this perforation there were some partly ulcerated small nodules. On the right cheek there was one nodule and on the left cheek there were four nodules. Behind the corner of the mouth there was a patch measuring 2 by 1 centimetres, with nodules. Behind the mandible on the left side there were two scrofulous ulcers. In the nasal cavity there were extensive ulcers. The lungs were normal. The urine was normal. Light treatment was given up. On March 3rd T.R. treatment was commenced. The dates of the injections of T.R. and the doses in fractions of a milligramme were as follows: March 3rd, 1/4000; March 15th, 1/2000; April 8th, 1/1000; May 13th, 1/500

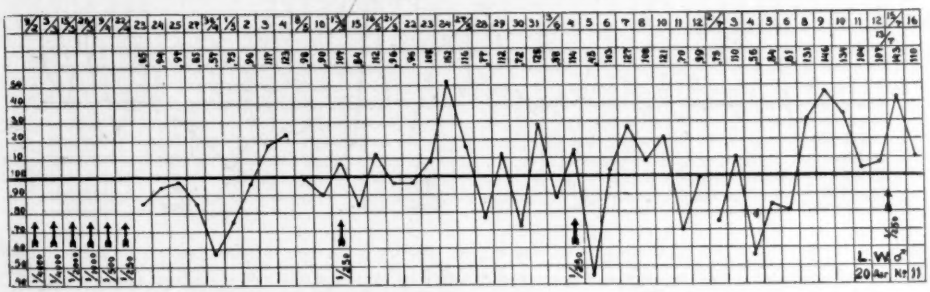
June 4th, 1/500; June 25th, 1/500; July 13th, 1/500; August 7th, 1/500; and August 23rd, 1/500; making a total of nine injections. By Sept. 12th the affection had grown much. The nose was red and swollen with many partly ulcerated nodules. Around the fistula there was an ulceration. The left cheek was the seat of confluent nodules in a patch of one centimetre in diameter; at the left corner of the mouth there were about ten nodules. On the neck there was a patch measuring 2 by 3 centimetres with nodules. The nasal cavity remained as on March 3rd.

CASE 3.—**A. N.** (Curve 2). The patient was an unmarried woman, 36 years old, who had been suffering from lupus vulgaris for 21 years. She had been treated with excochleation and excision several times, until eight years ago she was admitted to the Finsen Light Institute, where from 1899 to 1906 she was treated with 2494 sittings. The mucous membrane was treated with the galvano-cautery. The disease became much better during the treatment, but many deep nodules remained on both cheeks. On March 3rd, 1907, there was some infiltration of the nose, both the cheeks, and the chin. There were scars with many deep typical nodules. In the cavity of the nose there were extensive ulcers. On the prolabium of the upper lip, on the inside of the lips, and on the palate there were small ulcers. Light treatment was given up. On March 3rd T.R. treatment was commenced. The dates of the injections of T.R. and the doses in fractions of a milligramme were as follows: March 3rd, 1/4000; March 14th, 1/2000; April 8th, 1/1000; May 13th, 1/500; June 4th, 1/500; July 3rd, 1/500; July 24th, 1/500; August 8th, 1/500; and August 26th, 1/500; making a total of nine injections. By Sept. 5th the nodules had increased very much in size and number. The mucous membrane remained as on March 3rd.

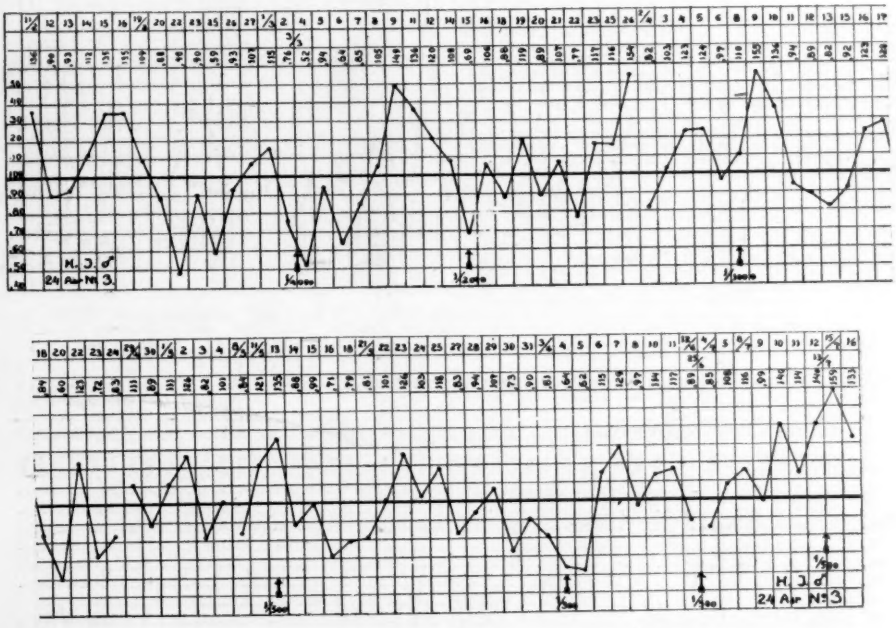
CASE 4.—**H. D.** (Curve 5). The patient was an unmarried woman, 24 years old, who had been suffering from lupus vulgaris for 11 years. She had been treated with ointments until nine years ago she was admitted into the Finsen Light Institute, where she was treated from 1898 to 1906 with 2384 sittings. The patient was treated especially on the face and on the upper limbs, where the affection became a good deal better, but new eruptions constantly made their appearance. On March 3rd, 1907, there were a great deal of infiltration and many widespread nodules in the face. On the neck, on the limbs, and on the trunk there were many in part very large spots with confluent nodules. There was no pulmonary tuberculosis. The urine was normal. Light treatment was given up. On March 3rd T.R. treatment was commenced. The dates of the injections of T.R. and the doses in fractions of a milligramme were as follows:—March 3rd, 1/4000; March 15th, 1/2000; April 8th, 1/1000; May 13th, 1/500; June 4th, 1/500; June 25th, 1/500; July 13th, 1/500; August 2nd, 1/500; and August 23rd, 1/500; making a total of nine injections. On Sept. 6th there was no change. The lungs were normal, as also was the urine.

CASE 5.—**T. P.** (Curve 10). The patient was an unmarried woman, 39 years old, who had been suffering from lupus for 27 years. She had been treated in many different ways until nine years ago she was admitted into the Finsen Light Institute, where she was treated from 1898 to 1906 with 798 sittings. During the first years the affection grew better, but for economical reasons the patient did not attend to the treatment as she ought to have done and the affection again grew worse. On Feb. 20th, 1907, there was a deep infiltration of the right ear and surrounding parts, measuring 18 by 11 centimetres, with numerous partly confluent nodules; between these some scars were seen. Both eyes showed serious keratitis. The lungs were normal; the

CURVE RELATING TO CASE 1.



CURVE RELATING TO CASE 2.



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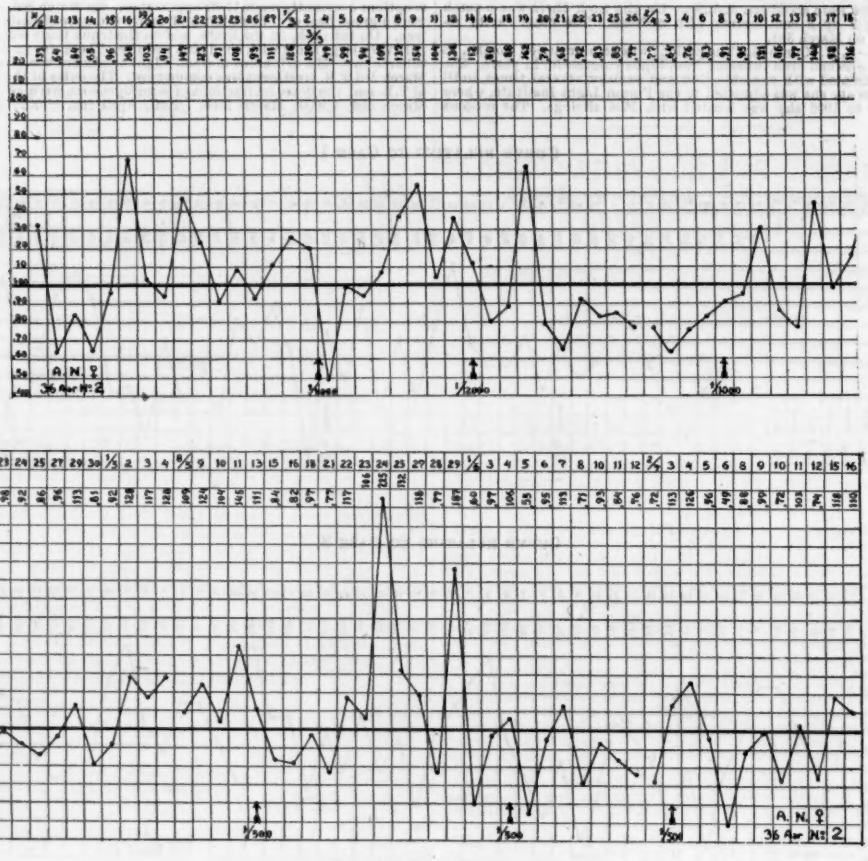
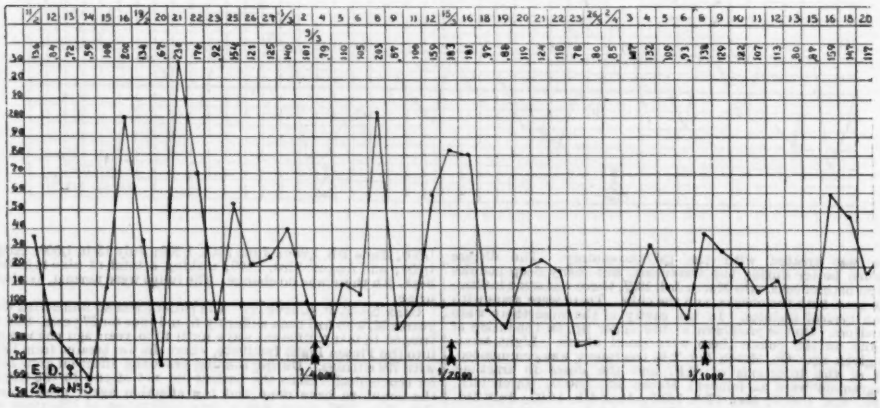
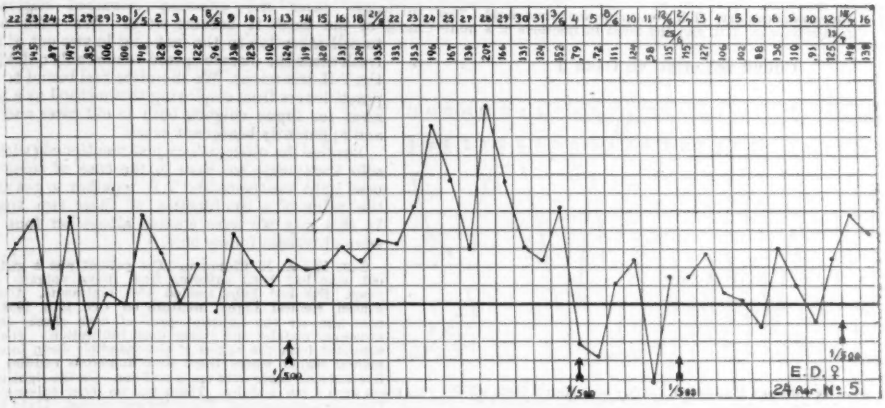


CURVE RELATING TO CASE 4.

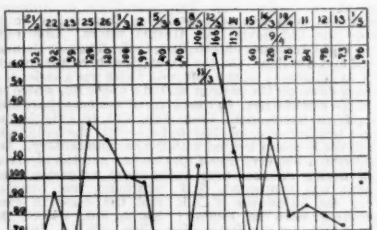


CURVE RELATING TO CASE 4—*continued.*



urine was normal. Light treatment was given up. On March 11th T.R. treatment was commenced. The dates of the injections of T.R. and the doses in fractions of a milligramme were as follows: March 11th, 1/4000; April 9th, 1/1000; June 4th, 1/500; June 25th, 1/500; July 12th, 1/500; August 2nd, 1/500; and August 23rd, 1/500;

CURVE RELATING TO CASE 5.



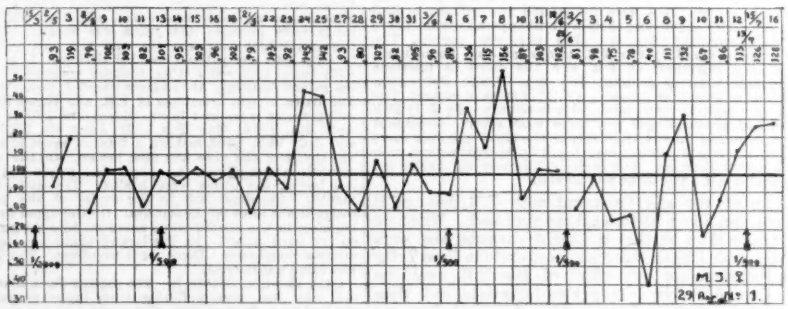
making a total of seven injections. On Sept. 14th the affected area was much more infiltrated, with many confluent nodules, some of which were ulcerated. The affection had now spread in the direction of the eye and on the neck. For the rest the extent of the affection remained as on Feb. 20th. The conditions of the eyes had changed at times; at present a serious keratitis again existed. The lungs were normal; the urine was normal.

parts were healed. On March 15th, 1907, the cheeks were cicatrised without nodules. On the right ala nasi and in the inner corner of the right eye there were small ulcers. There were also nodules on the left upper eyelid, an ulcer on the upper lip near the left angle of the mouth, and widespread nodules and ulcers on the prolabium; on the under lip near the prolabium there were a great many nodules. The chin was without any affection. In the neck there was only a single ulcer one centimetre long. The lungs were normal; the urine was normal. T.R. treatment was commenced. The dates of the injections of T.R. and the doses in fractions of a milligramme were as follows:—March 15th, 1/2000; May 13th, 1/500; June 4th, 1/500; June 25th, 1/500; July 13th, 1/500; August 2nd, 1/500; and August 23rd, 1/500; making a total of seven injections. An area of the affection was at the same time treated with Roentgen rays. On Sept. 13th the nodules and ulcers remained on the left upper eyelid, in the inner corner of the right eye, and on the neck, whereas the nose, the upper lip, and the under lip, which had been treated with Roentgen rays, were partly healed up.

CASE 7.—**M. H.** (no Curve). The patient was a married man, 40 years old, who had been suffering from lupus vulgaris for three years. He had been treated with ointments until he, one and a half years ago, was admitted into the Finsen Light Institute, where he was treated during the years 1905 and 1906 with 239 sittings. The affection grew worse, with a character of pronounced malignity. We therefore at the close of 1906 stopped the light treatment. On Feb. 9th, 1907, there were widespread patches on the left cheek, the neck, the forehead, the left ear, the scalp, the chest, the back, and the right elbow. Most of the glands on the neck were swollen. The lungs seemed normal; the urine was normal. T.R. treatment was begun. The dates of the injections of T.R. and the doses in fractions of a milligramme were as follows: Feb. 9th, 1/4000; and March 3rd, 1/4000; making a total of two injections. April 9th: A couple of days after the last injection the patient was attacked successively with erysipelas, pleurisy, and pneumonia, from which he died. The necropsy showed a widespread tuberculous affection of the glands in the hilus of the lungs. In the lungs there were both old and new tuberculous foci morbus cordis mitralis et tricuspidalis and adherent pericardium were also present. The indices of the patient were not determined.

CASE 8.—**J. J.** (Curve 8). The patient was a girl, 16 years old, who had been suffering from lupus for five years. She had been treated

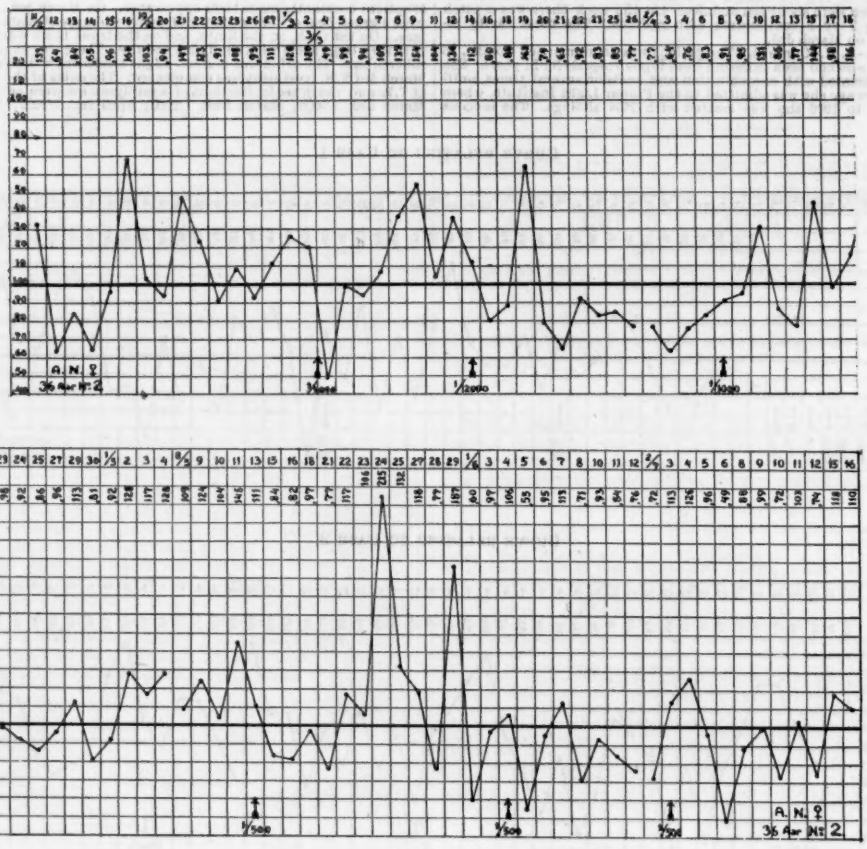
CURVE RELATING TO CASE 6.



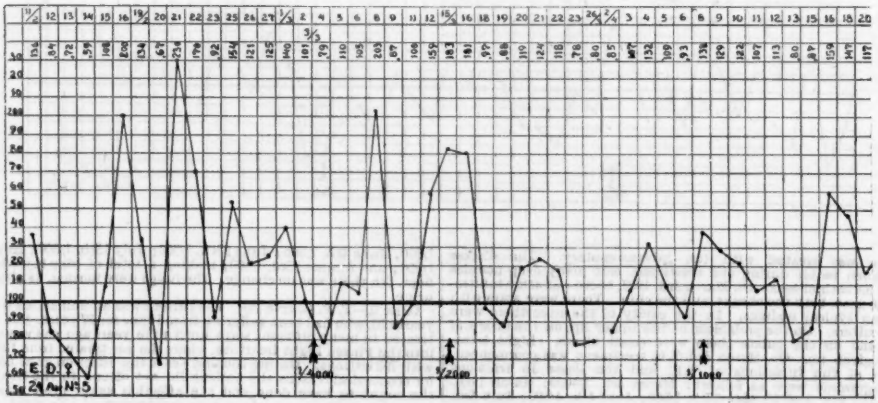
CASE 6.—**M. J.** (Curve 1). The patient was an unmarried woman who had suffered from lupus vulgaris for 14 years. She had been treated with excochleation, cauterisation, and old tuberculin until nine years ago she was admitted into the Finsen Light Institute, where from 1898 to 1906 she was treated with 1343 sittings. She was also of late years treated with Roentgen rays. The affection got very much better and great

with ointments until two years ago she was admitted to the Finsen Light Institute, where from 1905 to 1906 she was treated with 203 sittings. The mucous membrane was treated with the galvanocautery. During the light treatment the affection healed and it was only on the mucous membranes that a relapse occurred. Feb. 7th, 1907; On this date there was on the skin nothing distinctly lupous,

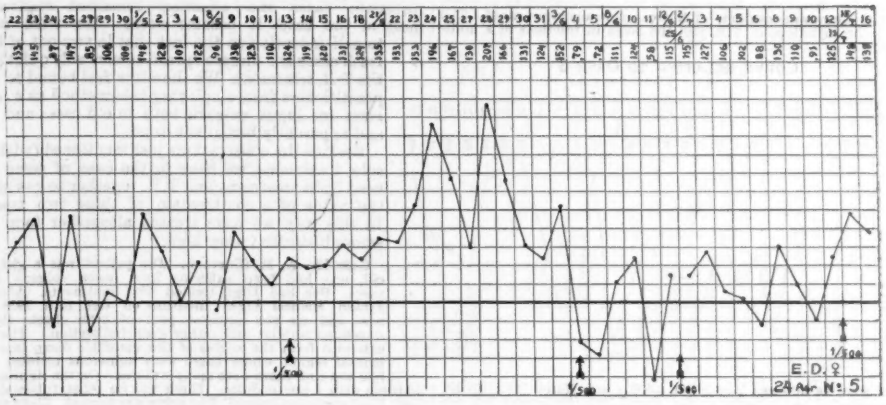
CURVE RELATING TO CASE 3.



CURVE RELATING TO CASE 4.

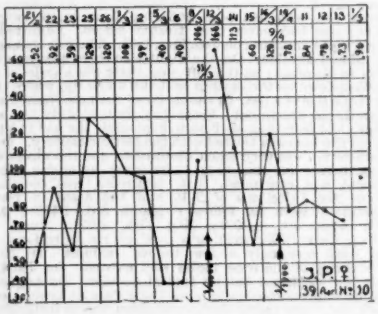


CURVE RELATING TO CASE 4—*continued.*



urine was normal. Light treatment was given up. On March 11th T.R. treatment was commenced. The dates of the injections of T.R. and the doses in fractions of a milligramme were as follows: March 11th, 1/4000; April 9th, 1/1000; June 4th, 1/500; June 25th, 1/500; July 12th, 1/500; August 2nd, 1/500; and August 23rd, 1/500;

CURVE RELATING TO CASE 5.



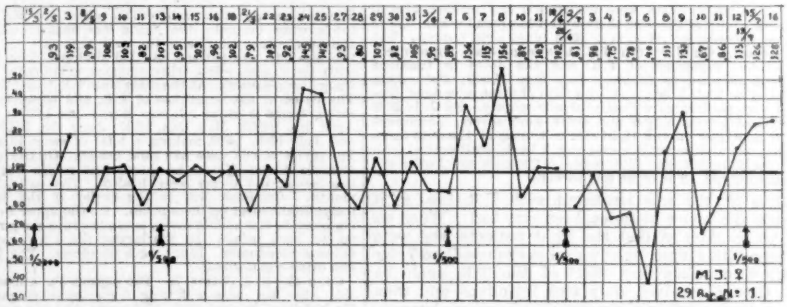
making a total of seven injections. On Sept. 14th the affected area was much more infiltrated, with many confluent nodules, some of which were ulcerated. The affection had now spread in the direction of the eye and on the neck. For the rest the extent of the affection remained as on Feb. 20th. The conditions of the eyes had changed at times; at present a serious keratitis again existed. The lungs were normal; the urine was normal.

parts were healed. On March 15th, 1907, the cheeks were cicatrised without nodules. On the right ala nasi and in the inner corner of the right eye there were small ulcers. There were also nodules on the left upper eyelid, an ulcer on the upper lip near the left angle of the mouth, and widespread nodules and ulcers on the prolabium; on the under lip near the prolabium there were a great many nodules. The chin was without any affection. In the neck there was only a single ulcer one centimetre long. The lungs were normal; the urine was normal. T.R. treatment was commenced. The dates of the injections of T.R. and the doses in fractions of a milligramme were as follows:—March 15th, 1/2000; May 13th, 1/500; June 4th, 1/500; June 25th, 1/500; July 13th, 1/500; August 2nd, 1/500; and August 23rd, 1/500; making a total of seven injections. An area of the affection was at the same time treated with Roentgen rays. On Sept. 13th the nodules and ulcers remained on the left upper eyelid, in the inner corner of the right eye, and on the neck, whereas the nose, the upper lip, and the under lip, which had been treated with Roentgen rays, were partly healed up.

CASE 7.—**M. H.** (no Curve). The patient was a married man, 40 years old, who had been suffering from lupus vulgaris for three years. He had been treated with ointments until he, one and a half years ago, was admitted into the Finsen Light Institute, where he was treated during the years 1905 and 1906 with 239 sittings. The affection grew worse, with a character of pronounced malignity. We therefore at the close of 1906 stopped the light treatment. On Feb. 9th, 1907, there were widespread patches on the left cheek, the neck, the forehead, the left ear, the scalp, the chest, the back, and the right elbow. Most of the glands on the neck were swollen. The lungs seemed normal; the urine was normal. T.R. treatment was begun. The dates of the injections of T.R. and the doses in fractions of a milligramme were as follows: Feb. 9th, 1/4000; and March 3rd, 1/4000; making a total of two injections. April 9th: A couple of days after the last injection the patient was attacked successively with erysipelas, pleurisy, and pneumonia, from which he died. The necropsy showed a widespread tuberculous affection of the glands in the hilus of the lungs. In the lungs there were both old and new tuberculous foci morbus cordis mitralis et tricuspidalis and adherent pericardium were also present. The indices of the patient were not determined.

CASE 8.—**J. J.** (Curve 6). The patient was a girl, 16 years old, who had been suffering from lupus for five years. She had been treated

CURVE RELATING TO CASE 6.

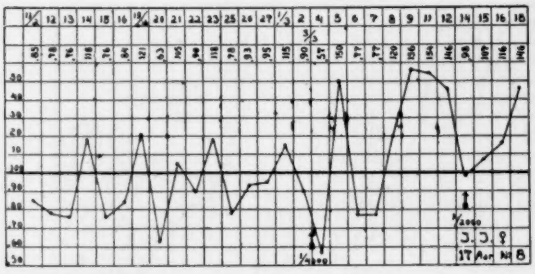


CASE 6.—**M. J.** (Curve 1). The patient was an unmarried woman who had suffered from lupus vulgaris for 14 years. She had been treated with excochleation, cauterisation, and old tuberculin until nine years ago she was admitted into the Finsen Light Institute, where from 1898 to 1906 she was treated with 1343 sittings. She was also of late years treated with Roentgen rays. The affection got very much better and great

with ointments until two years ago she was admitted to the Finsen Light Institute, where from 1905 to 1906 she was treated with 203 sittings. The mucous membrane was treated with the galvano-cautery. During the light treatment the affection healed and it was only on the mucous membranes that a relapse occurred. Feb. 7th, 1907: On this date there was on the skin nothing distinctly lupous,

The cavity of the nose was not affected. On the hard palate there was one large and deep ulcer measuring two centimetres in length and breadth. March 3rd: The ulcer on the palate remained as before in spite of the galvano-cautery. T.R. treatment was commenced. The dates of the injections of T.R. and the doses in fractions of a milligramme were as follows: March 3rd, 1/4000; and March 14th, 1/2000; making a total of two injections. On March 14th the patient left the institute for economical reasons. On June 7th on the soft part of the nose there were a few nodules and in the cavity of the nose there were widespread ulcers. The ulcer in the palate was larger; it now occupied the whole hard and soft palate extending on the uvula and the arch of the palate. There were widespread ulcers on the gum of the upper jaw.

CURVE RELATING TO CASE 8.



II.—*Fresh and Mild Cases.*

CASE 9.—E. L. (no Curve). The patient was a boy, seven years old, who had been suffering from lupus vulgaris for six months. He had not been treated before. Admitted to Finsen Medical Light Institute on May 31st, 1907. On the right cheek there was in the middle a round, pale-red patch (two centimetres in diameter), slightly prominent, with an uneven surface, and fine desquamation. There were no distinct nodules. On the right eyebrow there was a patch, three centimetres long and three-quarters of a centimetre broad, of the same type as that on the cheek. Excised portions of tissue showed under the microscope typical indications of lupus. There were no other tuberculous affections. The lungs were normal; the urine was normal. On June 11th T.R. treatment was commenced. The dates of the injections of T.R. and the doses in fractions of a milligramme were as follows: June 11th, 1/2000; July 1st, 1/2000; July 24th, 1/2000; and August 19th, 1/2000; making a total of four injections. Sept. 3rd: On the right cheek there was a patch measuring two centimetres in diameter with numerous typical nodules. The patch on the right eyebrow remained as on May 31st. The lungs were normal; the urine was normal.

CASE 10.—A. J. (no Curve). The patient was an unmarried woman, 20 years of age, who had been suffering from lupus vulgaris for one month. She had not been treated before. Admitted to Finsen Medical Light Institute on June 22nd, 1907. The soft tissues of the nose were red and swollen with two distinct nodules. There were widespread ulcers in the cavity of the nose. The lungs were normal. The urine was normal. On July 26th T.R. treatment was commenced. The dates of the injections of T.R. and the doses in fractions of a milligramme were as follows: June 26th, 1/800; July 17th, 1/500; August 7th, 1/500; and August 23rd, 1/500; making a total of four injections. The cavity of the nose was at the same time treated with the galvano-cautery. By July 29th the nodules had grown bigger, and by Sept. 2nd the affection was much greater. The soft tissues of the nose were a good deal swollen, with two ulcers of the size of a pea and numerous nodules. In the cavity of the nose the ulcers were much smaller. The lungs were normal. The urine was normal.

CASE 11.—A. F. (no Curve). The patient was a married woman, 29 years old, who had been suffering from lupus vulgaris for one year. She had been treated with ointments without effect. Admitted to Finsen Medical Light Institute on July 6th, 1907. On the right side of the tip of the nose there was an ulcer of the size of a hempseed in the circumference of which there were infiltration and solitary typical nodules. In the cavity of the nose there were widespread ulcers. There were no other tuberculous affections. The lungs were normal. The urine was normal. On July 6th T.R. treatment was commenced. The dates of the injections of T.R. and the doses in fractions of a milligramme were as follows: July 6th, 1/1000; July 29th, 1/1000; and August 23rd, 1/500; making a total of three injections. The cavity of the nose was treated with the galvano-cautery. By July 29th the affection had grown bigger and there were several prominent nodules. On Sept. 2nd on the right side of the tip of the nose there were confluent nodules (a patch measuring 2 by 1½ centimetres) with rather pronounced infiltration. The cavity of the nose had healed up. The lungs were normal. The urine was normal.

The results of the sole treatment with T.R. has, as it appears from the above histories, been very bad. When we are going to consider at first the eight patients who were treated before with Finsen light we must exclude Case 7, for this patient died before any effect of the T.R. could be expected. Case 8 received only two injections and then went home. On her return three months afterwards her condition was much worse. Concerning the other six patients, the very widespread affection in Case 4 remained stationary, while the disease of the five other patients spread during the T.R. treatment. The three fresh cases did not give better results. One of them (Case 9) remained stationary while the other two became very much worse. We could not in any of the cases see any improvement at all following treatment according to Wright's method. In the most fortunate cases the affection remained stationary; in most of the cases it became worse. We wish especially to call attention to the fact that in two out of the three fresh cases the disease spread remarkably quickly during the T.R. treatment. We therefore feel bound to dissuade practitioners from employing this method as a *sole treatment* for lupus vulgaris both in old cases and in fresh and apparently benignant cases.

Besides the observations just mentioned (with T.R. as sole treatment) we have in the case of some patients used light treatment and T.R. together to get an idea of the value of a combination of these two treatments. In this way we have treated altogether four patients whose histories follow here.

CASE 12.—A. M. (Curve 4). The patient was a girl, 14 years old, who had been suffering from lupus vulgaris for eight years. She had been treated with ointments. Admitted to Finsen Medical Light Institute on Oct. 15th, 1906. On the nose and on the foremost part of both cheeks there were numerous nodules and rather deep infiltration. The affection extended from the angles of the mandible down into the submental region where there were numerous nodules. On the lips and chin there were many nodules. On the right upper eyelid there were a few nodules. There was no other tuberculous affection. The lungs were normal. The urine was normal. Light treatment. From Oct. 5th, 1906, to Sept. 21st, 1907, the patient had 195 sittings. Feb. 1st, 1907: There had been steady improvement. The nodules were fewer and smaller. Light treatment was continued. T.R. treatment was commenced. The dates of the injections of T.R. and the doses in fractions of a milligramme were as follows: March 3rd, 1/8000; March 14th, 1/4000; April 8th, 1/2000; June 4th, 1/1000; June 25th, 1/1000; July 13th, 1/1000; August 2nd, 1/1000; and August 23rd, 1/1000; making a total of eight injections. March 18th: The infiltration was now not so great as before and the nodules were fewer. Sept. 21st: The affection was now very much better; the infiltration was less pronounced, and there were only a few nodules.

CASE 13.—A. G. (Curve 6). The patient was an unmarried woman, 23 years old, who had been suffering from lupus vulgaris for six months; she had never been treated before. Admitted to Finsen Medical Light Institute on Jan. 21st, 1907. The soft tissues of the nose were red and swollen. On the right side there was an ulcer 2 centimetres in diameter; on the left side there was a series of small ulcers extending down on the septum and the upper lip, where there was an ulcer of the size of a pea. In the cavity of the nose there were extensive ulcers. Light treatment: From Jan. 21st to July 2nd she had 104 sittings; and from August 28th to Sept. 20th she had 24 sittings. The cavity of the nose was treated with the galvano-cautery. On March 3rd the infiltration was very much diminished and the ulcers were healed. In the cavity of the nose there were extensive ulcers. Light treatment was continued. T.R. treatment was commenced. The dates of the injections of T.R. and the doses in fractions of a milligramme were as follows: March 3rd, 1/4000; March 14th, 1/2000; April 8th, 1/1000; May 13th, 1/500; June 4th, 1/500; and June 25th, 1/500; making a total of six injections. May 14th: There were now only a few typical nodules. In the left side of the cavity of the nose ulcers still existed. On June 25th there were a few cicatrices but no typical nodules. On August 28th there was some slight desquamation, but there were no typical nodules. In the left side of the cavity of the nose there was an insignificant ulcer.

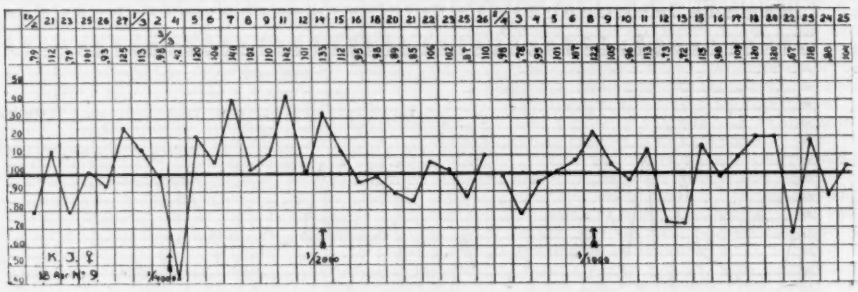
CASE 14.—K. J. (Curve 9). The patient was a girl, 17 years old, who had been suffering from lupus vulgaris for five years. Admitted into the Finsen Medical Light Institute on Feb. 20th, 1907. There was nothing abnormal on the skin. In the cavity of the nose there were ulcers on the vestibulum and on the mucous membrane. On the prolabium of the upper lip there was a large ulcer which extended into the gum and into the anterior part of the hard palate. On the soft palate there was a small ulcer. On the posterior wall of the pharynx there was a small ulcer. In the larynx there was a defect of the border of the epiglottis with a few small nodules. There were redness and swelling of the introitus laryngis and there was a prominent granuloma in the inter-arytenoid region. The left vocal cord was ulcerated throughout nearly its whole length. There were no other tuberculous affections and in particular the lungs were normal; the urine was normal. Light treatment of the vestibulum nasi, the lip, and the palate. From March 13th to July 20th the patient had 113 sittings. The larynx was treated with lactic acid. The other mucous membranes were treated with the galvano-cautery. At the same time T.R. treatment was commenced. The dates of the injections of T.R. and the doses in fractions of a milligramme were as follows: March 3rd, 1/4000; March 14th, 1/2000; April 8th, 1/1000; May 13th, 1/500; June 4th, 1/500; June 25th, 1/500; and July 13th, 1/500, making a total of seven injections. July 20th: The cavity of the nose was now healed. On the upper lip there was an ulcer extending into the gum. The palate was nearly healed. In the larynx the ulcers were healed. The patient went away for a month. On Sept. 4th in the cavity of the nose there was an insignificant ulcer on the septum. On the upper lip there was a rather big ulcer in the middle which extended into the gum and a little down on the hard palate. In the larynx there was some swelling of the mucous membrane. There were no ulcers. The lungs were normal. The urine was normal.

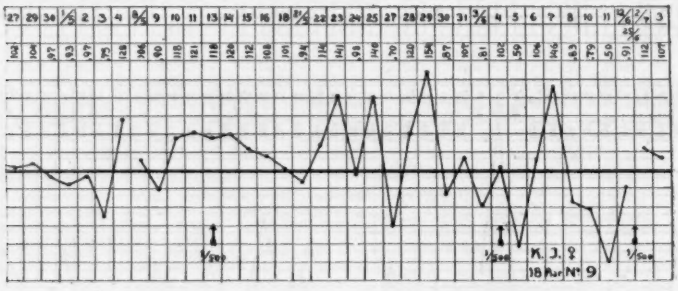
CASE 15.—S. S. (Curve 7). The patient was a married man, 49 years old, who had been suffering from lupus vulgaris for five years. He had been treated with ointments and the galvano-cautery. Admitted into the Finsen Medical Light Institute on Jan. 21st, 1907. On the left ear, the left cheek, the left side of the scalp, and the left side of the neck there was over an area measuring 18 by 9 centimetres a confluent patch of nodules with rather great infiltration. There were no other tuberculous affections, and in particular the lungs were normal. The urine was normal. Treatment with Roentgen rays. On Feb. 18th the affection was much smoother. Light treatment: From Feb. 15th to June 18th, 1907, the patient had 81 sittings. On March 3rd

CURVE RELATING TO CASE 12.

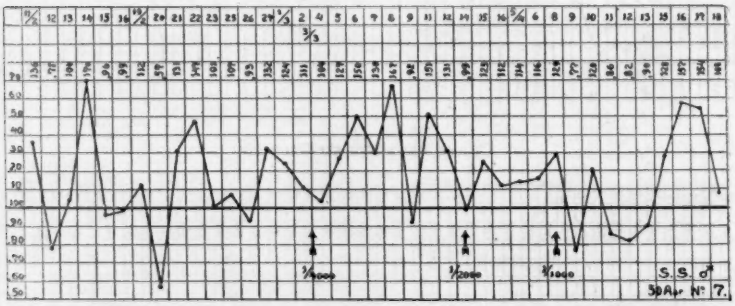
CURVE RELATING TO CASE 13.

CURVE RELATING TO CASE 14.





CURVE RELATING TO CASE 15.



.R. treatment was commenced. The dates of the injections of T.R' and the doses in fractions of a milligramme were as follows: March 3rd, 1/4000; March 14th, 1/2000; and April 8th, 1/1000; making a total of three injections. On May 27th there was still a rather great infiltration with nodules.

Whether the T.R. has had a good effect on these patients or not we cannot decide because our material is too small. We have not got the impression that their affections have improved more quickly during the combined treatment than would have been the case with light only. Still we wish to go on with these examinations, hoping that a longer series of cases may give a decisive answer on the question. We may safely continue the T.R. injections combined with light treatment because we have never seen any harmful effect on our patients from these low doses of T.R. The temperature which we in the beginning measured very often never showed the slightest rise. The patient's general state of health was never influenced, and we never saw any morbid symptoms referable to the lungs, the intestine, or the kidneys.

THE CUMBERLAND INFIRMARY.—The committee of management of the Cumberland Infirmary has presented to the subscribers its sixty-seventh annual report, being that for the year 1907. The in-patients numbered 1135, 166 over the average of the previous ten years. The out-patients numbered 3214 and the average daily attendance in this department has increased from 48 to 57 persons. The average daily occupation of beds was 93·2 and the average stay of in-patients 30 days. It frequently happened that the wards were overcrowded. During the year 80 patients have received the benefits of the Convalescent Institution at Silloth, assisted by the Agnes Moore fund. The ordinary income for the year amounted to £5149 and the expenditure to £5282. The cost per occupied bed for the year was £52 6*s.* 11½*d.*, which was a reduction of very nearly £3 on the previous year.

SANATORIUM BUNGALOW BURNT.—Dr. A. H. Wylie, the medical superintendent of the Devon and Cornwall Sanatorium for Consumptives, Didworthy, South Brent, South Devon, has suffered a considerable loss by the rapid burning of his bungalow near the sanatorium which occurred on March 15th, at about 9.30 P.M. Dr. and Mrs. Wylie had retired to rest just previously and the fire was discovered by Miss Wylie and her brother who warned their father and mother in time for them to make their hurried escape. The nearest fire brigade is stationed at South Brent, some distance away, and was not summoned as it was thought it would serve no good purpose. The patients in the sanatorium were unaware of the fire until the following morning. A resolution of sympathy with Dr. Wylie has been passed by the committee of the sanatorium.

Clinical Notes:
MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTES ON A CASE OF PERFORATIVE APPENDICITIS IN A PREGNANT WOMAN, FOLLOWED BY ABSCESS OF THE THYROID GLAND AND ABORTION.

BY H. S. PENDLEBURY, M.A., M.B. CANTAB, F.R.C.S. ENG.,
SURGEON TO, AND LECTURER ON SURGERY AT, ST. GEORGE'S HOSPITAL; SURGEON TO THE ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.

THE patient, a woman, aged 27 years, who was about four months pregnant and whose thyroid gland had always been large, was admitted into St. George's Hospital on March 31st, 1907. She had been seized with acute abdominal pain on the previous day with vomiting.

On admission the patient was a thin, anxious-looking woman. Her temperature was 100° F., the pulse was 120, and the respirations were 36. There were great pain and tenderness in the right iliac fossa. The abdomen was distended but not very rigid. A vaginal examination showed fulness in the right fornix and fluctuation could be obtained bimanually. The condition was diagnosed as acute perforative appendicitis with abscess. On March 31st an operation was performed. The incision was carried through the right rectus muscle. An abscess was found in the pelvis, of which the cæcum and appendix formed the superior boundary. The appendix was removed and the abscess was drained with gauze and a tube. The pathological report was acute gangrenous, perforative appendicitis. Recovery of the abdominal condition was uneventful. The wound was healed and the patient was convalescent on April 14th.

On April 21st the patient had a rigor with a temperature of 101°. On the 25th she complained of stiffness of the neck and of her throat feeling sore. On the 27th swelling of the enlarged thyroid was noticed, with some hoarseness. On the 30th this swelling had increased very rapidly during the previous 48 hours and there were considerable tenderness and some dyspnœa. An operation was performed under chloroform and ether. An incision was made in the mid-line over the most prominent part of the swelling. About a couple of ounces of pus with pieces of gangrenous thyroid came away. The pus had the characteristic foul odour of bacillus coli communis infection. A tube was introduced. The bacteriological report was as follows: "The pus contains bacilli like the bacillus coli communis, but it is not possible to cultivate these." The abscess healed rapidly.

On May 27th the patient suddenly aborted. Very little blood was lost. Her general condition was good. On June 11th she was removed to the convalescent hospital at Wimbledon and on the 26th she was discharged recovered.

I saw the woman in February last and there was then no evidence of any myxœdematous condition, so that some of her thyroid tissue remains active.

Remarks.—Mr. James Berry[1] remarks that a thyroid gland which is already enlarged is the more likely to be the seat of an abscess. Metastatic abscesses of the thyroid gland apart from enteric fever are sufficiently rare to warrant my publishing this case, and I have been unable to find any record of an abscess in this position caused apparently by the bacillus coli.

Brook-street, W.

[1] Diseases of the Thyroid Gland, 1901, pp. 130 et seq.

NOTE ON TWO CASES OF ANTHRAX UNTREATED.

BY JOHN CROPPER, M.D. CANTAB.

THE recent publication of two cases of anthrax by Dr. J. S. Clarke in THE LANCET of Feb. 29th reminds me that at Nablus, in Palestine, I had lately two cases which were so far untreated that the final result was not affected either way. One case showed very unusual symptoms. This patient, a youth, aged 19 years, whose work was not concerned with wool in any way, was attacked by malignant pustule on the right cheek. When I saw him for the first time on the twelfth day of the illness a large typical "pustule" nearly one and a half inches in diameter, with dark "eschar" surface and surrounded by much induration, was seen on the right malar eminence. For some days he had been absolutely paralysed from below the nipple line on both sides. As a last chance the pustule was freely excised under chloroform, but though cicatrisation set in no recovery from the paralysis ensued and he died about three weeks later. He had before I saw him been treated by a quack with caustics in an ineffectual manner. Only a few very doubtful bacilli could be made out from the discharge. The second patient was a woman, aged 50 years, on the back of whose neck a little above the vertebra prominens an anthrax pustule had developed, which had gone on to a "natural cure" before she came under my observation as an out-patient. By this time she had in the site indicated a deep hole, measuring one inch in diameter and also in depth; it was filled by a white and firmly adherent slough and excreted an abundant discharge, exhaling a most fœtid odour. The skin was crater-like and much undermined. The slough came away in large pieces and she made a perfectly "uneventful recovery" in the course of two or three weeks.

Though comparatively rare, anthrax is more often met with in Palestine than in England. I have seen cases of *charbon des paupières* once or twice; these, by causing sloughing of the upper eyelid, give rise to some of the very worst cases of loss of the eyelid. Shortly before leaving the East I was asked to operate on a man whose eyelid had sloughed, leaving the eyeball exposed through an opening in the same.

Chepstow, Monmouthshire.

NOTE ON A CASE OF POST-INFLUENZAL PERICARDITIS.

BY F. CARMINOW DOBLE, M.R.C.S. ENG., L.R.C.P. LOND.,
LATE HOUSE SURGEON, GREAT NORTHERN CENTRAL HOSPITAL.

A MAN, aged 21 years, was seized on March 4th with giddiness, nausea, and aching in his legs; this was followed on the next day by a very slight nocturnal cough and pain over the præcordial area, chiefly limited to the apex beat. The temperature was normal; the pulse was 85 per minute and of good volume and tension. I diagnosed influenza. Examination of the chest revealed nothing abnormal until on March 13th I again examined his chest. Inspection, palpation, and percussion yielded no evidence of disease, but on auscultation over the space between the second and third rib, close to the sternum, a double friction sound was to be heard. It was nearly synchronous with systole and diastole, the heart sounds were partly obscured, but no murmur or reduplication was present. When the patient held his breath the abnormal sounds were not altered. The area over which the friction sounds could be heard was of about the size of half-a-crown. They were very high pitched and sibilant and were greatly increased on pressure on the chest with the stethoscope. On the next day they were not so well marked and the day after that were quite gone. The patient says that he had an attack just like the present one last year and a medical man said "it was influenza affecting the heart."

It is curious that the pericardium should be affected by so mild an attack of influenza, especially with so few bronchial symptoms. It seems to prove that Pfeiffer's bacillus circulates in the blood early in the disease in even a mild form and produces a true septicæmia.

Reedham, R.S.O., Norfolk.

SALARIES OF POOR-LAW MEDICAL OFFICERS.—The Local Government Board has recently informed the Falmouth board of guardians that a payment of £20 per annum was insufficient remuneration for the medical officer of the workhouse. At a meeting of the guardians held on March 26th Mr. Preston-Thomas, the Local Government Board inspector, stated that he had been instructed to confer with the guardians on the matter. He added that the salary was about 7*s.* weekly and the medical officer had to supply medicines out of that, so that his remuneration was about the same as would be paid to a boy for scaring crows. Mr. Preston-Thomas contended that it was unreasonable to pay a medical officer such a sum for the duties which he performed. After some discussion the guardians decided to take no action on the suggestion of the Local Government Board.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

DERMATOLOGICAL SECTION.

Exhibition of Cases.

A MEETING of this section was held on March 19th, Dr. H. RADCLIFFE CROCKER, the President, being in the chair.

Dr. H. G. ADAMSON showed: (1) a case of Urticaria Pigmentosa in a child, aged three years; and (2) a case of Ringworm (tinea circinata) in a child, the ringworm having in all probability been derived from a horse. The father of the patient was a harness repairer.

Dr. T. P. BEDDOES showed for Dr. P. S. ABRAHAM a case of Favus in a Mouse (exhibited). The mouse had been caught by a woman whose husband was attending Dr. Abraham for trichophytic sycosis in which large-spored mycelium had been demonstrated. Dr. Abraham regarded the association in this case of favus with ringworm as fortuitous.

Mr. G. W. DAWSON showed a case of "Ringed Eruption" of the Left Hand and Fingers, of the type of lichen annularis, in a man, aged 18 years, who asseverated that he had had the condition for seven years.—The PRESIDENT considered that it was probably an instance of lichen planus.—Dr. J. GALLOWAY thought that it was rather like what he had called lichen annularis.

Dr. T. COLCOTT FOX showed a case of "Bilateral Telangiectases" of the Trunk in a woman who gave a history of marked epistaxis in childhood and of recent rectal hæmorrhage. There was no family history of similar conditions, which differentiated this case from a group in which these symptoms had been associated with family inheritance. A section of one of the telangiectases showed dilatation of capillaries without other changes.

Dr. WILFRID S. FOX showed a case of Dermatitis Artefacta in a young girl, the lesions consisting of sharply demarcated rounded patches on the chest and left side. The agency of production was not demonstrated.

Dr. GALLOWAY showed a case of an Acute Scarlatiniform Eruption which had apparently resulted from the administration of quinine. The eruption had commenced to show itself within two hours of taking a dose of one grain of quinine and the temperature had risen suddenly to 102° F., with symptoms of shivering, nervous depression, and swelling of the fauces. The rash was followed by widespread superficial desquamation. Similar symptoms had been noted 12 months previously on taking a patent preparation said to contain quinine.

Dr. E. G. GRAHAM LITTLE showed a case of Granulomatous-looking Tumours and Nodules, the result of Ingestion of Bromides, in an infant who had never had that drug but whose mother (who suckled her child) had been daily taking large doses of bromide for two years.

Dr. J. H. SEQUEIRA showed: (1) a case of Lupus of the Face, with a Lymphatic Œdema of the Hands resembling the condition which had been called "Lupus Pernio"; and (2) a case of X Ray Warts which had appeared on the Hands in the course of four years' work of an operator in an x ray department. The warts had been removed from one hand by exposure to measured doses of x rays administered therapeutically.

ODONTOLOGICAL SECTION.

Exhibition of Specimens.—Treatment of Suppurative Periodontitis in Displaced Teeth.—Treatment of Children from the Dental Point of View.

A MEETING of this section was held on March 23rd, Mr. J. HOWARD MUMMERY, the President, being in the chair.

Mr. A. HOPEWELL-SMITH, through the honorary secretary, exhibited and described specimens of (1) Jaws of Hemirhamphus and (2) Developmental Defects in the Upper Jaw of a Pike (*Esox Lucius*), which he presented to the museum.

Mr. E. STURRIDGE read a casual communication on the Treatment of Suppurative Periodontitis in Displaced Teeth, which he contended could not be cured except by the replacement and retention of the teeth in their correct positions. He showed a method of retaining such teeth by means of a wire and small pins cemented to the teeth which had previously had small holes drilled in them. In the discussion which followed it was admitted that the gum did not re-unite with the tooth and that the "pockets" always remained.

Mr. W. HERN opened a discussion on Mr. J. F. Colyer's paper on the Treatment of Children from the Dental Point of View. He opposed Mr. Colyer's views and said he believed that caries occurred in inverse ratio to the amount of care exercised in cleansing the teeth with brush and silk, and that the use of the brush was more important than thorough mastication for preserving the teeth. He was always anxious not to extract the deciduous teeth.—Mr. C. ROBBINS advocated and practised the habit of rewarding his small patients with sweetmeats.—Mr. W. RUSHTON still advocated the use of a toothbrush but did not believe that caries occurred in inverse proportion to its use. He agreed with Mr. Colyer that they did not know the causes of dental caries at all thoroughly.—Dr. J. SIM WALLACE asked why, if the toothbrush was efficient, there had not in recent years been a great decrease in the amount of dental caries, and contended that it was quite possible to bring up children immune from caries who had never used a toothbrush, and instanced cases under his care. He believed that thorough mastication was most important and blamed "pap" feeding for the craving for sweets, the lack of proper mastication, and a great deal of caries. Mouth-breathing was another cause.—Mr. STANLEY P. MUMMERY thought that the interference of civilisation with the laws of survival of the fittest was a cause of the prevalence of caries.—Mr. COLYER, in reply, said he was satisfied to have proved by the discussion which he had provoked that there was a wide difference of opinion among dental surgeons as to the causes of caries. It was a fact that the chemical composition of modern food-stuffs had changed. He did not think that heredity was an etiological factor and he strongly believed that dental surgeons would be able by discovering the causes of dental caries to remove them, and that in the future a healthy and functional mouth would be far more common than at the present day.

THE MEDICO-LEGAL SOCIETY OF LONDON.

Discussion on Post-mortem Examinations in Cases of Death under Anæsthetics.—The Legal Liability of the Anæsthetist.

CONSIDERABLE interest was manifested in a meeting of this society held on March 24th, when Mr. Justice WALTON, the President, occupied the chair.

The discussion on Dr. L. Freyberger's paper read at the last meeting, entitled "An Analysis of 74 Cases of Sudden Death while under the Influence of Anæsthetics," had been adjourned and the proceedings were commenced by Mr. R. HENSLOWE WELLINGTON who read a short paper on the Legal Liability of the Anæsthetist, in the course of which he said: Dr. Freyberger read his paper on "Deaths under Anæsthetics" before this society on Feb. 11th, 1908. That paper was limited to a narration of 74 cases upon which he had made post-mortem examinations for the purpose of inquests in the Westminster and South-Western jurisdiction of the coroner. Out of the 74 deaths, 71 occurred at the five large hospitals and three in private practice. Though Dr. Freyberger gave an interesting narrative of these cases he drew no deductions from them. But during the short discussion which followed Dr. Frederic W. Hewitt gave us to understand that the majority of deaths from or under an anæsthetic were preventable, and that if death took place it was, as a rule, not the patient nor the operator that was at fault but the anæsthetist. I take it, then, that in his opinion the patient dies from an overdose of the anæsthetic—i.e., that he or she is poisoned owing to a want of care on the part of the anæsthetist. That we all value Dr. Hewitt's opinion goes without saying, but it must first be proved that these deaths are due to the anæsthetic itself, and secondly to the want of reasonable skill, care, and attention on the part of the anæsthetist and not due to any contributory cause on the part of the patient from an idiosyncrasy, or to his pathological condition at the time of the operation, or on the part of the operating surgeon, and how can one differentiate between these, or say that there is not a combination of them as causes contributing to the death and so exonerate everyone concerned? It would be well for the Privy Council, with whom this matter rests, to make it a penal offence for an unqualified

man to administer any anæsthetic, whether local or general. Perhaps the coroner's court is not the *fons et origo* of exact scientific knowledge upon the matter of the immediate scientific cause of death in these cases, though it must be admitted that the court certainly has a useful function to perform in the matter and should ascertain if there has been any *malpraxis*. But I am struck with the idea that a most useful office might well be created by the county councils if they would appoint some one with a medical training and a coroner's experience to act as a registrar, such as the hospitals possess, to make an abstract or digest from the depositions, taken at inquests by the coroners, upon these and all other deaths. These depositions are at present a mass of wasted material, but would be a source of much useful information if in the hands of such an officer or registrar. It has been argued by some (though not at this society) that if the anæsthetic were not required then the anæsthetist is liable at law. Surely if an operation is necessary an anæsthetic is, humanely speaking, equally so. It is then the operating surgeon who is to be called into question if anyone for *malpraxis*, but who can controvert his opinion as to whether the operation was necessary or not? If the anæsthetist is an unqualified practitioner and is engaged by the qualified operator, or if an unqualified operator engages a qualified anæsthetist, then the qualified and registered man, surgeon, or dentist is guilty of "covering," under the regulations of the General Medical Council, whether the patient lives through or dies under the anæsthetic. And here I will say *en passant* that it is very doubtful as to whether the dentist who has the L.D.S., without the full qualification of the physician or surgeon, is qualified to give any anæsthetic at all, or whether he is not limited to the administration of nitrous oxide gas and must call in a qualified practitioner to give the other anæsthetics; he is then in the same position as the unqualified man. If the anæsthetist is engaged by a surgeon to adminster the anæsthetic, the surgeon is the servant of the patient and agent to find a capable anæsthetist, and if both show reasonable care, skill, and attention neither of them is liable for *malpraxis* whether the patient lives or dies. Again, if the operating surgeon engages an anæsthetist who gives an anæsthetic for an illegal operation, the anæsthetist if ignorant of the illegality of the operation cannot be held liable whether the patient survives or dies, but if the anæsthetist knows the nature of the operation to be illegal he is equally liable to answer with the surgeon for felony if she survives and for murder if she dies. If the *causâ causans* of the death is due to a pathological condition of the patient, unknown until the patient is upon the operating-table, the death must of necessity be one of misadventure, or if due to a recognised pathological condition and the patient or his representative had been warned of any risk and accepted that risk the patient then accepted full responsibility and exonerated both the surgeon and the anæsthetist. Supposing that the anæsthetist sees danger from the anæsthetic after he has commenced its administration and withholds his hand, at the same time warning the operating surgeon that to proceed is dangerous, the *onus probandi* is perhaps thrown upon the surgeon if he proceeds with the operation, though it may be well-nigh impossible to finish it forthwith. But naturally the two must work together and do their best for the life that is in their hands and then no one can reasonably find fault or sustain any action at law for *malpraxis*. When a patient enters any hospital and an operation under an anæsthetic is required the patient expects, and the law implies, that a competent anæsthetist will give the necessary anæsthetic, and if a qualified practitioner administers it and uses reasonable care and skill he cannot be held liable for *malpraxis* if unforeseen death supervenes. Further, if an unqualified man, as pupil, is manipulating the anæsthetic apparatus under the supervision of a qualified anæsthetist the former is not acting illegally, nor is the latter liable for "covering," as this is permissible under the regulations of the General Medical Council. But there is often the risk that the young anæsthetist is hurried in his work by the busy hospital surgeon who is anxious to hurry on the operation and get away to his private practice, consequently the anæsthetist runs the risk of administering a poisonous dose of the anæsthetic. This is an argument in favour of special resident anæsthetists at all our large hospitals. In conclusion, the immediate cause of death attributable to the anæsthetic, *per se*, as a poison, must first be proved beyond any reasonable doubt; and then a further proof that the administrator of that anæsthetic or poison—and it matters not whether he be a qualified or an unqualified practitioner—did not use reasonable care, skill, and attention must be shown before he can be made answerable to the law for damages or punishment. But the administration of any anæsthetic, whether for a local or a general anæsthesia, by unqualified practitioners—which is carried on to a very large extent throughout the kingdom—is a grave public danger and should, perhaps, be made a penal offence by statute.

The PRESIDENT then suggested that Dr. F. W. Hewitt should propose the motions standing in his name. The question before the meeting was not primarily the medical or the scientific side of the matter but rather the question of public policy. Of course, it would be important to have the opinion of gentlemen who spoke not only with great scientific knowledge but with practical experience.

Dr. HEWITT then moved that the two following motions be forwarded in the name of the Medico Legal Society to the General Medical Council and to the Privy Council respectively:—

1. That in view of the importance of the administration of anæsthetics this society is of opinion that it is highly desirable, in the public interest, that every member of the medical profession before he is registered shall have received instruction in the administration of anæsthetics. It therefore earnestly begs the General Medical Council to consider whether they can see their way to include a course of instruction in anæsthetics amongst their requirements in regard to professional education.

2. That as the administration of any drug or drugs with the object of producing generalised insensibility to pain or actual unconsciousness for any medical and surgical operation, or during child-birth, cannot be safely undertaken without medical knowledge and skill, your petitioners humbly pray that legislation be granted whereby the administration of any drug or drugs with either of the aforesaid objects by any person other than a duly registered medical practitioner or some one acting immediately under his supervision, direction, and instruction be made a penal offence.

One question seemed to Dr. Hewitt to come to the front before all others on that occasion—namely, the means which should be adopted for protecting the public against accidents under general anæsthetics. It was one of the most vital and pressing questions of the day. The present state of things he could only describe as antiquated and slipshod. In the first place what was the present position of the law? He felt that he was treading on most delicate ground because he was not a lawyer. It appeared that any person, whether qualified or unqualified, experienced or inexperienced, reputable or disreputable, might administer an anæsthetic, and provided that he did this to the best of his ability and with no unlawful motive he was not likely to be punished or even blamed if his patient died as the result of the anæsthetic given. Was it right in the public interest that some of the most powerful drugs in the British Pharmacopœia should be at the disposal of ignorant, if well-intentioned, persons? The community was protected against risks incidental to the sale of poisons, the adulteration of food, milk, and the like, but the advertising bone-setter, the herbalist, or in fact anyone might freely employ chloroform without any infringement of the law. When anæsthetics were first introduced, more than half a century ago, they were often intrusted to unqualified persons, nurses, and others; but surgery had completely changed since then and the requirements of the surgeon and of the public were such that the administration of an anæsthetic, in the modern sense of the term, could only be safely undertaken by those possessing medical knowledge and skill. Possibly the attractions of medicine and surgery had taken away men of brilliant abilities whose work would have been welcomed by those who had interested themselves in this particular branch, but at the present time the average medical man who gave an anæsthetic and the general practitioner in the country had not had the amount of training which he ought to have had and that amount of experience which would entitle him to administer these drugs. Secondly, he would refer to the share which the educational authorities took in the matter. The General Medical Council, which governed the various examining bodies, did not make a course of instruction in anæsthetics one of its requirements. It recognised that some instruction should be given. He had written recently to the 22 examining bodies of England, Scotland, and Ireland and he found that only eight made it compulsory for candidates to have received any instruction in anæsthetics. So that a man might graduate in medicine and surgery at one of our leading Universities without ever having administered an anæsthetic. In England there were 11 examining bodies; of these seven

required a course of instruction and four did not. In Scotland there were six examining bodies but only one required a course, and in Ireland there were five, none of which required it. That was not a satisfactory state of things and something was required to remedy it. Then what was the state of things at the hospitals? There was some improvement in this direction but at a certain number of them there might be a rather better system, both of instruction to students and of administering the department responsible for the use of anæsthetics. He thought that there ought to be some men of the highest professional and academical attainments at the head of the teaching portion of this study, and that especially there was room for resident anæsthetists at many of the large hospitals. The result of this unsatisfactory state of things was shown by the annual returns of the Registrar-General and by the weekly records of cases of death under anæsthetics. He was not contending that deaths could be avoided. He was not dealing in any way with the question of specialism; he was dealing merely with the average medical man, and he maintained that the average medical man passed from his hospital without having the proper equipment in this department of practice in the public interest. Statistics must be looked upon as absolutely valueless. Who could say what particular share the anæsthetic, the operation, or the pathological condition of the patient had in causing the death? A committee of the British Medical Association sat some years ago upon the subject and all its labours were practically thrown away. Nothing came from that most carefully conducted clinical inquiry simply because it knew in discussing any given case that there was this difficulty. The two proposals which he submitted would, he personally believed, have the effect of very materially lessening the evil with which they were confronted. The Society of Anæsthetists had, he believed, approached the General Medical Council and had been told that there was no room for another subject, but he thought that it must appeal to everyone who recognised the importance of the subject that some alteration was necessary. He congratulated the society in occupying the happy position of being of great use not only to the public but to the medical profession in general, which by reason of being split up into a great number of bodies was not able to act as could a single society of this character.

Mr. HENSLOWE WELLINGTON seconded the motions.

Sir ALFRED FRIPP said that the question was an extremely complicated one because there were many different points of view from which it might be approached. Dr. Hewitt's proposal that every student should have a course of instruction had, of course, won hearty support. The second motion should have the support of the medical profession, but if such a law was passed that none but qualified men should administer anæsthetics, it would be hitting a large number of the public who got their tooth extracted and a whiff of gas for the modest half-crown. They would be driven into the hospitals and dispensaries and the large body of the medical profession who made their money by small driblets would suffer. Speaking as coming from a hospital with a large dental department he thought that they would find themselves overburdened with work. It opened up the possibility of having to face a very large social question of whether there was not already more than enough done for that very large class that could afford something but could not afford to pay the full fee for medical or surgical attendance and who were very prone to get their services for nothing at all. As regards operations in the country very difficult circumstances were found and where it was not always possible to procure the services of a special anæsthetist. Whether this should be met by the creation, or rather the multiplication, of the special class of anæsthetists, or whether it would be better met, as Dr. Hewitt had suggested, by the leavening up of the whole profession by requiring students to take a course in anæsthetics, as was done at many hospitals, was worthy of consideration. He was surprised to find that the responsibility of the administration of anæsthetics was upon the surgeon. He had certainly thought that the surgeon who availed himself of the assistance of the skilled anæsthetist shifted the responsibility. If the surgeon dared to interfere no anæsthetist would brook that interference for a moment. In his hospital they took proper care that every student should have attended a course in the administration of anæsthetics and should have seen them administered and have taken part under the skilled anæsthetist attached to the hospital. He believed that such a course tended to the turning out of a class of men much more likely to be able to avoid those common mistakes of the past.

Dr. R. J. PROBYN-WILLIAMS regretted that the discussion was confined to the two motions, which would receive the hearty approval of anæsthetists present. He thought that Dr. Hewitt was rather extreme when he said that he wished for more teaching in anæsthetics and at the same time said that the drugs were safe. If he had been fortunate enough not to see a patient die on the operating-table it was exceptional. There were many cases at any rate in which the patient was in the absolute extremity of danger and nothing but the greatest skill had saved his life. It was a good deal owing to the efforts of the Society of Anæsthetists that at any rate the Royal College of Surgeons of England had made this important branch of practical science a part of its curriculum.

Dr. F. J. SMITH referred to Dr. Hewitt's statement (made at the February meeting of the society) that nine out of ten deaths under anæsthesia could be avoided by greater care upon the part of anæsthetist and said that it surely went beyond the limits of fair criticism of the whole body of skilled anæsthetists. He thought that motion No. 2 contained a pious opinion which he was afraid would go the way which good intentions were said to go. He could not imagine the legislature passing anything like an Act based on those lines, or interfering with quackery, of which perhaps nineteen-twentieths of the members availed themselves. There must be hundreds of operations performed by the medical man which the student had never seen performed. He contended that if a man did his level best he was not responsible for any particular catastrophe. He asked the coroners present if they honestly thought that any 12 jurymen they called together were fit judges to decide the question as to who was responsible for the death? What would be the effect of the motion upon some unfortunate practitioner who met with a catastrophe when one of the jury asked what steps he had taken to resuscitate life and who on receiving the answer which he would not understand would say that he was going to stick out for a verdict of manslaughter. He protested against coroners holding inquiries in these cases. He was heartily with Dr. Hewitt in wishing that the students should be educated, but it must be remembered that whilst in London there was nothing easier than to get a skilled anæsthetist it was very different with a man say in Wiltshire. A degree of skill would be expected from Dr. Hewitt which would not be expected from a practitioner in the country.

Professor J. GLAISTER (Glasgow) considered that the present state of the law was anomalous. It was news to him that herbalists and bone-setters gave chloroform; he never heard of it in Scotland. It had been his misfortune to have to make inquiries into deaths under anæsthetics in every hospital, small and large, in and around Glasgow and some in private cases. He was inclined to think that chloroform was one of the most uncertain drugs in its operations because the factor that was not constant was the person to whom it was being administered. Dr. Hewitt must consider the living factor a little more. Each man in the hospital schools in Glasgow received tuition in the administration of anæsthetics. Dr. Hewitt would find himself on dangerous ground in stating that nine out of ten of the cases of death could be avoided by attention on the part of anæsthetists. In hospitals men of the highest rank as anæsthetists had deaths. There was surely a share in the condition of the patient which must be considered. There were two classes of operation—the operation of necessity and the operation of expediency. Surgeons had not infrequently to operate to give a patient a chance of life when he would not be justified in withholding that chance. He did not think the profession should advertise itself as incompetent to do its work. The second motion, he agreed, was but a pious opinion; he quite supported the first but unfortunately everybody was crying for lengthening the medical curriculum and if they were medical students they would think it long enough already.

Dr. F. J. WALDO said that from an examination of the machinery whereby the facts relating to investigated deaths were recorded he was led to believe that the data were worthless as to the ratio of deaths to the administration of anæsthetics. He referred to his article on this subject that had already appeared in THE LANCET.[1]

Dr. C. TEMPLEMAN (Dundee) said that at St. Andrews University no student was allowed to graduate without

[1] THE LANCET, March 21st, 1908, p. 851.

having had several opportunities under skilled supervision of the administration of chloroform, but they were not required to show a certificate on coming up for examination. All cases of death under anæsthetics in Scotland were inquired into by the Procurator Fiscal in precisely the same way as were other cases of sudden death, with the addition that the Crown required that the whole of the precognitions with the report should be submitted to some qualified man who was asked to report (1) whether the operation ought to have required the administration of an anæsthetic; (2) whether the patient had been previously examined to see if there was anything to contra-indicate the administration; and (3) whether the anæsthetic had been properly given. All these inquiries were held without the facts coming before the public at all.

Professor H. HARVEY LITTLEJOHN (Edinburgh) said that he thought the subject far too wide to lead to any good discussion. There was no advantage in holding a public inquiry. Surgeons must give chloroform for operative purposes and there was no object in setting up the public mind against the use of it and in making people believe that there were greater dangers than was really the case. He went most strongly against Dr. Hewitt if he said there was no danger connected with the administration of anæsthetics. They knew that people died not from chloroform but under chloroform, sometimes during the operation but sometimes from causes apart from chloroform. Then patients came out from chloroform and sometimes died afterwards. What was the proof that death had taken place from chloroform? Could it be obtained from a post-mortem examination? No. He had made many post-mortem examinations and found nothing diagnostic. Could they get proof from a chemical examination? Certainly not. What did the inquest lead to? How were they going to prove any fault either on the part of the surgeon or the administrator so long as he could say he used ordinary precautions? There was no object in having a public inquiry. The only object was to make out what was the cause of death, though he thought there ought to be a post-mortem examination to try to find out what was the cause of death in circumstances entailing the proper scientific examination of the organs. If competent men did that after a time there might be material to lead to an understanding of the state which led to a predisposition in some people, because no doubt there was a predisposition to suffer from the effect of chloroform in individuals.

Dr. J. BLUMFELD referred to Dr. Hewitt's statement that nine out of ten deaths were preventable. If deaths were inevitable then those who performed the largest number of operations should have the largest number of deaths, but the reverse was the case. A year's cases were reported in the newspapers numbering 74, and out of these five happened in the hands of men who were constantly engaged in giving anæsthetics and the other 69 in the hands of men with whom it was only an occasional duty. It did not seem to him to be a fair argument that because they did not believe Parliament would ever be induced to legislate on the lines suggested the society should not endeavour to introduce the thin end of the wedge, even if there was no immediate result.

Dr. J. F. W. SILK wished to dissociate himself from the old-fashioned idea that to say that some cases were inevitable was incorrect. He believed that there were cases in which it was perfectly impossible to avoid death. He believed that things had very much improved and although it might be that the licensing bodies did not require any particular form of definite instruction, in most medical schools, at any rate, training was given. He entered a most emphatic protest against the statement that inquests should be held in all cases. One of the favouring factors in causing these deaths was the state of terror which was often induced in a patient by reading sensational literature on the subject. They could not muzzle the press but he would muzzle the coroners.

Dr. W. H. WILLCOX thought that post-mortem examinations were of great value in many cases.

Mr. HARVEY MURPHY, barrister-at-law, thought that so long as a qualified man was doing his best the law was perfectly clear but what was wanted in the interest of the law and the public was to prevent unqualified men from dealing with dangerous drugs.

Mr. W. SCHRÖDER said that the coroner had no power to hold a private inquiry. He had a discretion in certain cases but that did not apply to any deaths occurring from unnatural causes. It was clearly laid down in the Coroners Act of 1887 that he should inquire in all cases due to violence and where he has reason to believe that the death was unnatural. He held that death from anæsthesia was unnatural and as the law stood an inquest should be held in every case.

Mr. H. BELLAMY GARDNER thought that they were 50 years behind the time. Chloroform was used everywhere and surely death from it was as natural as any form of death. It could not be differentiated from death arising from the injection of antitoxin to save a patient from diphtheria. He had been an anæsthetist for 13 years and stood in constant terror of being dragged before the coroner and his reputation and living taken away from him in consequence. He had given chloroform in over 20,000 cases and he could not conceive of anything more terrible than having to go before a jury who knew nothing about the subject. The simplest thing would be for the coroner to accept the certificate of two medical men which should be taken in cases of deaths while under anæsthetics as sufficient.

Mr. HUBERT SWEENEY, barrister-at-law, thought that statistics were of value, for otherwise the present discussion would not be taking place. He thought that even when the medical man did his best he should not be entirely exonerated from responsibility. He might use a drug about which he knew nothing and with regard to which he had not taken the precaution to be properly qualified. If death occurred surely some responsibility attached to him for neglecting to bring himself up to date in his profession. As regarding the suspicion which resulted from inquiries, suspicion would be ten thousand times greater if there were no coroner's inquests as advocated by some of the speakers.

The PRESIDENT said that he quite agreed with the last speaker, and if a person killed a man in performing some operation on him it would not be an absolutely sufficient excuse for that person to say that he had done his best. With regard to the subject of inquests, although that was a little outside the special matter which they were considering, it was impossible to confine the discussion to the resolutions altogether because, after all, it was a discussion on Dr. Freyberger's paper. The law was perfectly simple and plain. The difficulty arose from the facts. The law said that a coroner must hold an inquest if he thought the death was an unnatural one. The coroner was the judge, and if he had reason to think it an unnatural death he must hold an inquest. That involved various questions. To apply it to the death from anæsthetics, in the first place there must be reason to think that the death was caused by chloroform; that was the kind of death they were considering. And then he had to consider whether death by chloroform administered as an anæsthetic in the ordinary course of medical or surgical practice was such a death as an unnatural death. That question might perhaps be considered by the court some day and therefore he (the President) was not going to deal with it now. If death by chloroform was an unnatural death, and therefore if the coroner had reason to think the death was a death by chloroform, he must open an inquest. It seemed to him (the President) to follow that if the death was by an operation, if the man died from an operation, that plainly would be an unnatural death and there would be an inquest in every case in which a man died from an operation. The two things seemed to be on the same footing. With reference to the second of the resolutions, he had not had time to look into the matter carefully, but he thought that undoubtedly the only medical practitioner who committed an offence by practising without a qualification was the apothecary. He thought the Act of George III. was still in force by which persons were forbidden to practise as apothecaries unless they were qualified apothecaries. So far as he knew to practise as a physician, he (the speaker) did not mean to say to pretend he was a physician, but to do the work of a physician or a surgeon was not in itself a penal offence. To practise as an apothecary appeared to be a penal offence. Why, he did not know. But a man might perform operations or administer medicines and so forth provided he did not practise as an apothecary, whatever that meant, without committing an offence in doing so in itself. Of course, if he killed somebody in the course of his practice and he was not qualified he (the speaker) quite agreed that it was not sufficient for him to say he had done his best if he was doing something which was in itself a dangerous thing likely to cause death unless done with great skill and he knew he had no skill. In such a case he thought it would be obviously manslaughter and probably wilful murder.

The first proposition was unanimously agreed to.

Dr. HEWITT, replying on the second, said that the one object before them all was the safety of their patients. There should be no hair-splitting. When he said that nine cases out of ten were preventable he was speaking of the cases which had been described by Dr. Freyberger and others which clearly indicated that in a large number of cases the patients died from intercurrent asphyxial conditions which might have been avoided. Again, a gentleman who had recently died with an honourable record passed through a life of anæsthetic cases without having ever lost one—he had tens of thousands of cases. He (Dr. Hewitt) contended that the average medical man if properly trained on the principles such as a master of the art would be able to transmit to his students would be able to save life in about the proportion he had indicated. He had never intended to say that chloroform or any drugs could be regarded as safe. By careful treatment it was possible to render them comparatively safe—that was to say, if given in a haphazard way it was a dangerous drug, if given on a proper scientific principle it was not a dangerous drug. Dentists in the country administered gas because there were no properly trained men. The very large number of deaths occurred from asphyxia and unless a man had been highly trained he was not able to watch the respiration and guide it along through its various abnormal phases in such a way as thoroughly to protect the life of the patient.

Dr. FREYBERGER having briefly spoken the second proposition was put to the meeting and carried.

LIVERPOOL MEDICAL INSTITUTION.

Reminiscences of 42 Years' Professional Life in Liverpool.

A MEETING of this society was held on March 19th, Mr. T. H. BICKERTON, the President, being in the chair.

Dr. W. CARTER gave an address on Reminiscences of 42 Years' Professional Life in Liverpool. He remarked that owing to recent reviews of the advances in medicine and surgery by Dr. A. T. H. Waters and Professor W. Rushton Parker during a period almost contemporaneous with the time of his residence in Liverpool, he would confine himself to a statement of some of those public controversies and events in which he had taken part. The first, and perhaps the most trying, was the Contagious Diseases Acts. Believing that these degraded both the womanhood and the manhood of the country he was obliged to oppose them. In conjunction with the late Dr. Nevins, Dr. Ewing Whittle, and others they established a national association for their repeal in March, 1875, at a meeting at St. George's Hall, Liverpool, and decided to start a journal, the *Medical Enquirer*. He was honorary secretary to the association and sole editor of the journal, also a purely honorary position. The work lasted until the repeal of the Acts in 1886, Dr. Nevins distinguishing himself above all others by his zeal and work. The next public controversy was that concerning the position of the public abattoirs and hide market in a densely populated part of the city and very near to the Royal Infirmary. On behalf of a deputation from the Medical Institution he presented in 1884 to a meeting presided over by the then mayor statistical tables proving the greater unhealthiness of the district than of any other district generally similar anywhere in Liverpool. This was confirmed by a subsequent report made by Dr. Stopford Taylor, the then medical officer of health, and later still, in February, 1903, he was requested by the committee of the Royal Infirmary to meet the estate committee and to endeavour to dissuade it from renewing the lease of the abattoir. With the late Sir William Banks and Mr. Robert Gladstone he strongly urged this course on the authorities and trusted that this evil would ere long be removed. Dr. Carter next spoke of his prolonged efforts in the promotion of total abstinence both in Liverpool and elsewhere. Another controversy which was maintained for many years was that concerning the notification of infectious diseases without the slightest discretion being allowed in any case. He presided over a large meeting of the medical profession in that theatre in September, 1882, on the subject. After prolonged discussion and numerous meetings a compromise was agreed upon and the form now employed was sanctioned. The attempt to persuade the late Sir William Jenner to found a medical defence union, its subsequent formation, and later still the presidency by the late Mr. Lawson Tait, with Dr. Carter as a vice-president, were mentioned and everyone present was urged to join the present ably conducted union. In 1870–71 the visitation of Liverpool by a severe outbreak of small-pox was the occasion of Dr. Carter's writing a series of articles in the *Medical Times and Gazette*, after examination of all the returns supplied by the parish medical officer in charge of the public sheds. The mortality was strikingly inverse to the number and size of the cicatrices. Many years later, therefore, when the practice had arisen of some medical men making one small pin-prick and terming that efficient vaccination he felt bound to bring the matter before the Lancashire and Cheshire branch of the British Medical Association on Feb. 28th, 1889, at which a resolution adverse to this was come to at a large meeting. On March 23rd, 1904, at a large public meeting held at the Philharmonic Hall, under the presidency of Mr. Emmott, M.P., the Protestant Bishop of Liverpool proposed, and Dr. Carter seconded, motions which had the effect of starting the Congo Reform Association. As chairman of the professional subcommittee of the Tropical Diseases School since its formation, he felt much embarrassment at times owing to his having to protest against the extravagant laudation in the annual reports of the school of King Leopold of Belgium, and when invited to accompany the president of the school and some of his colleagues to Brussels to luncheon with the King last August twelve months he was obliged to refuse the invitation. When the midwives registration controversy arose he felt bound, under the conviction that many humble homes were wrecked through the spread of puerperal fever owing to uneducated and ignorant women, strongly to support the Bill for the education and registration of midwives. The matter was very hotly discussed on May 11th, 1894, at a large meeting held in that room, when his motion on the subject was lost by a large majority. He published his speech, copies of which were requested by the Royal College of Physicians of London for its library table, and finally, as everyone now knew, an Act was passed in 1902 compelling the education, certification, and supervision of all women practising as midwives. Dr. Carter lastly drew attention to the generosity and public spirit of the wealthy men of Liverpool, especially mentioning Mr. Sutton Timmis who after the death of his wife communicated to Dr. Carter through his friend Mr. Wade Deacon his desire to place £10,000 in the hands of trustees for promoting a cancer research, over the committee for carrying out which he (Dr. Carter) had presided, and still continued to preside, as chairman. He mentioned other splendid acts of generosity on the part of the same gentleman, and finally spoke of the extraordinary response to the appeal made by himself a few years ago for the family of the hero Mr. William Smyth, Liverpool contributing hundreds of pounds. Rich and poor alike gave, one poor man sending 2*d.* and another 6*d.*, while a poor dressmaker begged to be allowed to make clothes for the children and was overjoyed when allowed to do so; but no class contributed so generously or so generally as the medical profession who alone could estimate the great risks and the noble way in which that heroic man, like a true soldier, had met them.

A hearty vote of thanks, proposed by Dr. W. MACFIE CAMPBELL and seconded by Professor W. RUSHTON PARKER, was accorded to Dr. Carter for his excellent address.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 17th, Mr. H. Shackleton, the President, being in the chair.—Dr. F. W. Eurich read a paper on Tuberculosis of the Lung, in which he said that recovery was often spontaneous and that to obtain a cure nature's own methods must be employed. The outcome of this was the modern sanatorium treatment. Since the treatment had been restricted to suitable *early* cases the results had considerably improved. Experience seemed to show that the cases suitable for sanatorium treatment were those (1) with simple catarrh at one apex; (2) infiltration or consolidation at one apex, with or without catarrhal symptoms; and (3) infiltration with consolidation of *one* upper lobe. The other lung should not be appreciably affected. Contra-indications seem to be: (1) cavity formation; (2) repeated severe hæmorrhages; (3) persistent elevation of temperature; (4) albuminuria or glycosuria; and (5) severe tuberculous affections of other organs. But what about the cases whose disease had died down in spite of the fact that their lives had been spent in the slums under conditions in which every law of health was violated? The only explanation was that the

body had been able to raise a sufficient defensive force by the production of antibodies or antitoxins. These substances were produced by the body, where they did not know, in answer to a stimulus applied by the introduction of living germs. Further, the body could be artificially stimulated by the products of the germs in question or by the injection of the dead bacilli themselves. Koch's tuberculins were examples of such excitants, generally known as vaccines. No treatment, therefore, which had not this end in view could be effective. The sanatorium treatment and the vaccine treatment were distinct, but the former could be of no use without the latter, whether produced naturally or artificially. The chief difficulty in both modes of treatment was the dosage. Sanatorium treatment must be long carried out to be effective. Tuberculin if injected in too large a dose paralysed for the time being the production of antibodies. It had been shown by Wright that if a tuberculous knee were exercised or massaged a result was obtained similar to that following the injections of tuberculin. If the exercise had been excessive the production of antibodies sank; if rightly proportioned the formation of antibodies was stimulated. This process he termed auto-inoculation. It followed that the increased amplitude and frequency of the respirations due to walking might be a powerful aid to recovery, or the reverse, in pulmonary tuberculosis. The dose of this exercise must be measured by the opsonic index. At present this could not be applied in practice. Dr. Eurich next discussed the early diagnosis of pulmonary tuberculosis under two heads: 1. Which class of physical signs was the earliest and most reliable? 2. What was the best technique in percussion? He agreed with those authorities who said that the results of percussion were more constant and reliable than those of auscultation. The lightest form of percussion should be practised both in front and at the back and in mapping out an organ the plane of percussion should always be the same. It is by neglecting these precautions that different authors differed so widely in marking out the boundaries of the apex of the lung. The tuberculous nature of the process could be definitely proved in one way only—namely, by the finding of the tubercle bacillus in the sputum, which was a sure sign that destructive processes had already begun in the affected part. If the search for the tubercle bacillus should repeatedly prove negative then there remained four other bacteriological tests for the presence of a tuberculous infection of some organ. The four tests were: (1) the tuberculin reaction; (2) the estimation of the opsonic index; (3) von Picquet's vaccine reaction; and (4) the ophthalmic or conjunctival reaction of Wolf-Eimer and Calmette. Dr. Eurich described and discussed these methods and summed up his conclusions thus: "Given a suspected case of phthisis in which the physical signs are either absent or point only to some catarrh or consolidation at one apex, if tubercle bacilli are not discovered on repeated examination, to clear away any doubt as to the nature of the affection, I would propose to give an injection of tuberculin. If the patient has fever this test cannot be applied. If the eye be healthy I would then apply the ophthalmo-reaction. If the state of the eyes prohibit it and the patient be a child I think I should employ Picquet's test, and failing these I should have the opsonic index taken."—The paper was discussed by Dr. F. W. Goyder, Dr. J. Metcalfe, Dr. Johnston, Dr. H. J. Campbell, Mr. J. Arnold Evans, Dr. G. T. Beatton, and Mr. R. Mercer.—Dr. Eurich then replied.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—A meeting of this society was held on March 20th, Dr. O. W. Chapman being in the chair.—Dr. Chapman read a paper on a case of Granular Kidney in a girl, aged 15 years, probably due to congenital syphilis. The patient had always been delicate but it was not until three weeks previously that advice was sought on account of extreme difficulty in breathing and swelling of the feet and legs. The left ventricle was much hypertrophied and the second sound at the base was accentuated; no thrill or murmur could be detected. The radial arteries were hard and thickened. The liver was enlarged nearly to the umbilicus. The urine was of specific gravity 1010 and contained 2½ per cent. of albumin and granular casts. The condition gradually became worse and the patient died seven months later. Post mortem both kidneys were markedly granular, the right weighing two ounces and the left one and a half ounces. Inherited syphilis was suggested as the most probable cause of the condition found in this patient, as the bridge of the nose was depressed and the child's development was that of one six years her junior, and the face had an aged aspect. There was no history of any one of the generally recognised causes of renal inflammation; the mother had had four miscarriages, while of the two children born at term one died at eight months from marasmus.—Dr. F. Langmead showed (1) a case of Mongolian Imbecility associated with other Malformations. The patient was the only child. In addition to the characteristic signs of Mongolian imbecility there were (*a*) congenital morbus cordis (probably an imperfect septum ventriculorum); and (*b*) an accessory auricle on the right side. 2. A case of Extensive Anterior Poliomyelitis with Ballooning of the Abdominal Muscles. There were evidences of very extensive involvement of the anterior cornua which had occurred 18 months previously. The legs were useless and allowed great mobility, easily meeting behind the head. The back was sharply curved to the left in the lumbar region. The abdominal muscles were paralysed, especially on the left side, so that on coughing or crying two rounded protrusions were produced due to local yielding of the muscles.—Dr. J. Porter Parkinson showed a case of Tuberculosis of the Kidney with Pyonephrosis. The patient was a girl, aged nine years. During the last 18 months she had suffered from attacks lasting a few days with fever, headache, and pain in the left side of the abdomen. During the last attack a quantity of custard-like material came away with the urine. The liver was not enlarged, but the spleen extended slightly below the costal margin, and immediately below this but more deeply situated was a mass extending downwards for two or three inches, resistant and slightly nodular, with a rounded lower end like a kidney. It was dull except for the colon resonance which could be obtained over it. The right kidney was also thought to be enlarged. Tubercle bacilli had been found in the urine which was reduced in amount, being from 12 to 16 ounces daily. It was acid and deposited a large amount of pus; there was a trace of albumin but no blood. During the last five weeks she had increased five pounds in weight and the pus had almost disappeared from the urine.—Dr. F. Parkes Weber showed a boy, aged 10½ years, suffering from a Chronic Rheumatoid Affection. He also had enlargement of lymphatic glands, ankylosis of both knee-joints, and limitation of movement in the hip-joints.—Mr. Sydney Stephenson showed a case of Juvenile Tabes. The patient, a girl, aged 14 years, had bilateral optic atrophy, imperative desire to urinate, and absence of one knee-jerk and enfeeblement of the other. The family history was suggestive of syphilitic taint, although the patient showed no personal stigmata of inherited syphilis.—Dr. F. W. Higgs and Mr. P. Turner showed a case of Infantile Hemiplegia in a girl, aged eight and three-quarter years. The hemiplegia appeared after a series of fits at the age of ten months. There were lower facial paresis, spastic paralysis of the arm with athetosis of the hand and fingers, and paresis of the leg, with a talipes varus which was only present when the child walked quickly, and was probably of an athetoid nature also.—Dr. George Carpenter showed: 1. A case of Laryngeal Stridor in an infant aged six months. 2. A case of Cerebral Diplegia in a boy aged six years. 3. A Mongol, aged five months, with Congenital Morbus Cordis. 4. Photographs of kidney, ureter, and bladder from a case of Congenital Stricture of the Ureter. 5. Specimens and drawings of a case of Acute Pleuro-Pneumonia, with extensive fibrinous plugs visible to the naked eye in dilated lymphatics.

DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 12th, Mr. G. L. Thornton, the President, being in the chair.—The following cases and specimens were exhibited. Mr. R. Coombe showed a child the subject of most extensive Nævus of the left side of the face, where very great improvement had taken place under electrolysis, the child having been anæsthetised 11 times.—Dr. R. V. Solly showed a case, under the care of Dr. W. Gordon, of Myelocytic Leukæmia with great enlargement of the spleen in a man, aged about 60 years. There were 350,000 leucocytes per cubic millimetre. The patient was being treated by the x rays and with arsenic.—Dr. Solly showed a case, under the care of Dr. H. Davy, of a man who exhibited some Tabetic Symptoms, having marked Romberg's symptom, loss of knee-jerks, and stamping gait, but no Argyll-Robertson pupil or oculo-motor paralysis or loss of muscular sense. Sight had failed of late and the discs were unduly pale. Shooting pains in the limbs were also present occasionally. The man was a compositor and had suffered from lead poisoning.—Mr. E. J. Domville showed a case of Congenital Dislocation of the Hip in a girl. He also

showed the skiagram.—Dr. Solly showed a case of a child who had an Eruption on the Face and Limbs probably due to scabies.—Mr. J. D. Harmer showed for Mr. A. C. Roper a case of extensive Epithelioma of the Skin of the Face.—Mr. Harmer also showed a case where Mr. Roper had performed the Radical Mastoid Operation.—Mr. Domville showed a case of Middle-ear Disease in a man where he had performed the radical mastoid operation, and had also opened an abscess in the temporo-sphenoidal lobe, and another case in a girl where the radical mastoid operation had been performed. Both patients were doing well.—Mr. Harmer showed for Mr. Roper the Suprarenal Capsules removed post mortem from a case of Addison's disease exhibiting extensive caseation. Mr. Harmer also showed for Mr. Roper a Meckel's Diverticulum removed during operation for supposed appendicitis.—Dr. Solly showed Blood Films of: (1) Benign Tertian Malarial Parasite from a patient recently in the Royal Devon and Exeter Hospital; and (2) Myelocytic Leukæmia in the case of a man exhibited showing neutrophile, eosinophile, and basophile myelocytes, and nucleated red corpuscles. Dr. Solly also exhibited the test for Acetone, lately described in THE LANCET, where equal quantities of the urine and a weak solution of nitroprusside of sodium are mixed together in a test tube and strong ammonia (0·880) is floated on the top. A prune-coloured ring was demonstrated where the fluids joined.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 12th, Dr. G. Thomson, the President, being in the chair.—Professor J. M. Beattie read a paper on Acute Rheumatism: the Evidence in Support of its Bacterial Origin. After reference had been made to the clinical resemblances between acute rheumatism and other infective diseases and the epidemic nature of the disease a brief outline was given of the work of the various observers who had isolated organisms from cases of acute rheumatism. The work of Wassermann was specially emphasised and the confirmation of this work by Poynton and Paine, Ainley Walker and Beaton, Fitzmeyer, and others was reviewed. Professor Beattie then gave an outline of his own work in which, with a streptococcus isolated from three typical cases of acute rheumatism, he had produced in rabbits the clinical picture of acute rheumatism. He laid special stress on the fact that the organism in his cases was localised to certain areas in the synovial membrane and was not found in the blood or joint exudations. By intravenous injection he produced in a series of 23 rabbits 76 per cent. of non-purulent arthritis and 56 per cent. of endocarditis. Only three animals of the series died, two of these with very acute arthritis, and one with large mitral vegetations. In two of these the streptococcus was found in the blood but in the other it was found only in the synovial membrane of the knee-joints. These results were compared with parallel experiments carried out by himself and by Rufus Cole with streptococci from other sources than rheumatism and it was shown that the conditions produced were quite dissimilar, the arthritis being purulent and the endocarditis uncommon. Recovery was rare, the death-rate being 40 per cent. in his own cases and 80 per cent. in those of Cole. Reference was also made to the occurrence of acute interstitial nephritis in the animals experimented upon and of amyloid degeneration in cases of rheumatic fever. From the experimental work it was concluded that in acute rheumatism, at any rate in adults, the bacteria are in the majority of cases localised and that many of the clinical manifestations and pathological effects are due to the toxins.

NURSING AND MIDWIFERY CONFERENCE AND EXHIBITION.—In order to arouse and to maintain interest in the provision of properly trained midwives it is proposed to hold a series of annual conferences at which lectures will be given and discussions held on subjects of importance to midwives and new appliances shown. The first conference has been arranged to take place from April 28th to May 1st prox., under the patronage of H.R.H. Princess Christian, and it will be held at the Cavendish Rooms, Mortimer-street, Regent-street, London, W. It is hoped that railways will grant special rates to those attending the congress. No subscriptions are asked and there are to be no entrance charges. Tickets will be distributed from provincial centres or will be forwarded to responsible nurses and midwives who apply, sending a stamped addressed envelope, to Mr. Ernest Schofield, organising secretary, 32, Sackville-street, Piccadilly, London, W.

Reviews and Notices of Books.

A System of Medicine by Eminent Authorities in Great Britain, the United States, and the Continent. Edited by WILLIAM OSLER, M.D. Oxon. and McGill, F.R.S., Regius Professor of Medicine in the University of Oxford, England; formerly Professor of Medicine in Johns Hopkins University, Baltimore, &c. Assisted by THOMAS MCCRAE, M.D., F.R.C.P. Lond., Associate Professor of Medicine and Clinical Therapeutics in the Johns Hopkins University, Baltimore. Vol. III.: Infectious Diseases (continued); Diseases of the Respiratory Tract. London: Henry Frowde and Hodder and Stoughton. 1908. Pp. 960. Price to subscribers, 24*s.*; to non-subscribers, 30*s.*

IN our review of the first volume of this "System"[1] we explained the nature and scope of the work and expressed the opinion that it would be sure to secure the favour of a large public. As will be seen by the title detailed above, the present volume completes the consideration of the infectious diseases and also contains a series of articles on diseases of the respiratory tract.

The first contribution is on Malta Fever and is written by Colonel David Bruce, R.A.M.C. He defines the fever as a disease of long duration, characterised clinically by continued fever, profuse perspiration, constipation, frequent relapses, rheumatic or neuralgic pains, swelling of joints or orchitis; bacteriologically by the presence in the blood and organs of the micrococcus Melitensis (Bruce); and anatomically by congestion of the spleen and other organs. He also shows that the disease is a widespread one, cases having been reported from numerous places in the Mediterranean and also in Hong-Kong, in the Philippine and Fiji Islands, in the Mississippi Valley, and in certain places in the West Indies and in South America. The cases, however, do not seem to occur in large numbers in any place except Malta. The manner in which the micrococcus may enter the body is discussed at length and infection by means of goat's milk is duly referred to. The evidence in favour of this mode of infection is very strong and many of the curious features in the epidemiology of Malta fever are thus explained. The treatment of the disease has not as yet made any great advance. Hydrotherapy is probably the most useful measure, baths or sponging being employed.

Beri-beri is described by Dr. Maximilian Herzog. He remarks that in spite of the fact that the pathological anatomy of this disease is well known the etiology is far from being definitely and satisfactorily understood. The various theories which have been advanced as to the cause of the malady are discussed, especial attention being drawn to the observations of the two Japanese army surgeons, Okata and Kokubo, who had an excellent opportunity of studying the large number of cases transferred from Manchuria to Japan during the recent Russo-Japanese war. These investigators isolated a coccus which generally assumes the form of a diplococcus and which may also at times present itself as a coccus. They confidently maintain that this coccus is the causal factor in beri-beri. Dr. Herzog, however, is by no means convinced on the point. He failed to obtain the same organism from typical cases of beri-beri in the Philippine Islands. Also in about 50 cases of the disease occurring in Manila the search for the coccus again proved negative. He seems to have no doubt that in spite of these failures beri-beri is an infectious malady and is of opinion that further bacteriological investigations are necessary.

In Chapter III. Dr. Mazyck P. Ravenel gives a good account of the present state of knowledge in reference to Anthrax, Rabies, and Glanders. The subject of Tetanus is discussed by Dr. J. M. Anders, and that of Leprosy by Dr.

[1] THE LANCET, Oct. 19th, 1907, p. 1091.

Isadore Dyer, Tulane University. Chapter V. is devoted to a consideration of Gonococcus Infections, the author being Dr. Rufus J. Cole (Associate in Medicine in the Johns Hopkins Medical School and Hospital).

The subject of Tuberculosis is considered at great length, five chapters being required for the description of the disease in its various aspects. The history and etiology of tuberculosis are discussed by Dr. E. R. Baldwin; the pathology by Dr. W. G. MacCullum; whilst the symptoms, diagnosis, prognosis, prophylaxis, and treatment are described and commented on by Dr. Lawrance Brown. All these authors are American physicians who have had a large experience in tuberculous affections. Dr. Baldwin remarks that one of the most encouraging and instructive facts in connexion with the disease is the remarkable decrease in the death-rate in civilised countries during the last 15 years. He rightly expresses the opinion that this decrease is at once a confirmation of the value of the hygienic measures which have been enforced and one of the obvious benefits of improved conditions of life for the labouring classes in large cities. Some statistics are given in striking proof of these observations. Dr. Baldwin gives an interesting account of the four fairly distinct types of strictly infectious tubercle bacilli which have been recognised—the human, bovine, avian, and reptilian or piscine. He observes that these forms have certain characteristics in common but are sufficiently variable in others to be distinguished from each other. The views held by various observers on the identity or otherwise of these organisms are carefully criticised. The remarks on the mechanism of resistance and immunity afford instructive reading, as do also the observations on the infectivity of tuberculosis. Dr. Baldwin sums up the evidence in connexion with infection in a masterly manner. He considers that the doctrine of inherited or acquired susceptibility still holds sway, except that a specific susceptibility is in doubt and at most is not common; he also maintains that all infants are susceptible, that the susceptibility lessens with increasing age, and further, that adults are comparatively insusceptible "when without general or local lowered resistance and repeated or prolonged exposure." With regard to the sources of infection, he believes that the consensus of opinions and ascertained facts point to the sputum as of overwhelming importance, but in certain cases, and especially in restricted areas in which there is a large percentage of tuberculous cattle, cow's milk is an important factor, the flesh of tuberculous animals being of minor importance. The modes of transmission are also summarised but for a full account of the important matters discussed by Dr. Baldwin we must refer our readers to the original work. The other aspects of tuberculosis are admirably discussed by the physicians whose names we have already mentioned, the remarks on treatment by Dr. Lawrance Brown being particularly worthy of note.

Nine chapters in this volume are devoted to a consideration of the diseases of the respiratory tract. The Mechanism of Respiration and of the Respiratory Tract is ably described by Dr. T. R. Brown, Associate in Medicine in the Johns Hopkins Medical School, Baltimore; Diseases of the Nasopharynx, Pharynx, and Tonsils, by Dr. F. R. Packard of the Philadelphia Polyclinic; Diseases of the Larynx, by Dr. H. L. Birkett of McGill University; and Hay Fever by Dr. W. P. Dunbar, director of the Hygienic Institute, Hamburg, Germany. Diseases of the Bronchi are discussed by Dr. A. McPhedran of the University of Toronto. He divides cases of bronchitis into two classes: one in which the disease is due to a specific micro-organism, such as the pathogenic organism of influenza, measles, and whooping-cough; and the other he terms "common bronchitis, or bronchitis due to non-specific infections." He considers that "common bronchitis" usually develops from infection by the bacteria normally found in the bronchial mucous membrane or carried down by the inspired air; but the bacteria alone are not sufficient to produce it. Dr. McPhedran therefore maintains that the natural resistance of the mucous membrane must be reduced and this may be brought about by a variety of causes. The bacteria develop, he argues, under the influences of all the causes which lessen the vitality of the epithelium and leucocytes, alter the secretion of mucus and cause congestion of the mucous membrane, whether by disturbance of the vaso-motor function or by enfeeblement of the heart's action.

The chapter on Diseases of the Lungs is written by Dr. Hobart Amory Hare of the Jefferson Medical College, Philadelphia, and his remarks on broncho-pneumonia will be found of value. Dr. Frederick T. Lord of Harvard University is responsible for the chapter on Diseases of the Pleura, Dr. W. B. James (Columbia University) for that on Pneumothorax, and Dr. H. A. Christian (Harvard University) for that on Diseases of the Mediastinum.

The editors of this work may be congratulated on having brought together such a mass of valuable information as is to be found in this volume. Each chapter is practically a monograph on the subject with which it deals and a most valuable work of reference is the result.

Die Ohrenheilkunde der Gegenwart und ihre Grenzgebiete. (*Otology of the Present Day and its Province.*) In Single Parts. Edited by Dr. OTTO KÖRNER, Honorary Professor of Medicine, Director of the Clinic of the University and of the Polyclinic for Diseases of the Ear and Larynx at Rostock. *Die Otosklerose.* (*Otosclerosis.*) By Dr. ALFRED DENKER, Extraordinary Professor, Director of the Clinic of the Imperial University and Polyclinic for Diseases of the Ear, Nose, and Larynx at Erlangen. With 11 figures and 8 diagrams. Wiesbaden: J. F. Bergmann; Glasgow: F. Bauermeister. Pp. 135. Price 4*s.* 9*d.*

Dr. Denker, in the first chapter of this book on otosclerosis, describes with minuteness the anatomical characteristics and peculiarities of the inner wall of the tympanic cavity and he points out the importance to be attached in this disease to the fact that the cartilage which surrounds the oval window sends processes into the bone itself, and also that there are found at various spots in the labyrinthine capsule small cavities containing remnants of cartilage. He also details with great accuracy the functions of the various bones and muscles in connexion with rarefaction or compression of the atmosphere. The second chapter consists of remarks on the physiology of the ear and Dr. Denker draws attention, amongst other things, to the researches of Helmholtz, who showed how well qualified the auditory apparatus was to receive the deeper tones of the scale by air conduction. He also refers at length to the researches of Bönninghaus on the temporal bone of the whale, which is only connected with the other cranial bones by connective tissue and to the deductions which Bönninghaus made from this fact. Another argument which the author brings forward as a proof of the part played by the auditory ossicles in the perception of sound is derived from the contemporary appearance in the lower animals of the auditory apparatus and of the ossicles.

A short section is devoted by Dr. Denker to a definition of what is understood by otosclerosis and here we may remark that in this work neither chronic sclerosis of the catarrhal type nor that condition left after, or arising from, suppurative otitis is included. The various theories as to the origin of the disease are dealt with—namely, that put forward by Katz, that a predisposing cause in the shape of a constitutional dyscrasia exists, which, however, always requires an acute inflammatory condition of the part to set up the usual chain of pathological changes; and that held by Moos, Bezold, and others, that the process is a primary one in the bone and is not dependent upon previous inflammation of the middle ear;

whilst the pathologist Hanau considered it to have its origin in the periosteum. Dr. Denker points out that, although the view put forward by Katz is at least a probable one in many cases, yet the fact that the mucous membrane appears to be normal in so many instances must, if this theory be accepted, leave unexplained a certain proportion of the cases, and we must of necessity be forced to consider that a primary affection of the periosteum or the bone must account for these, though we are not as yet in a position to state whereabouts it commences. This is rendered the more probable when we consider that Politzer has demonstrated the existence of isolated foci of disease unconnected with the surface and the periosteum.

Dr. Denker next reviews the etiology of the affection. Here he points out that in the larger proportion of cases the disease appears in the female sex, and he alludes to the opinion of Walb that it is due to the condition of the blood in pronounced anæmia which is so much more often found in women than in men, and that pregnancy also has an influence on the development of the disease. He also refers to the well-established facts pointing to the influence of heredity. We find, however, that in the larger number of Dr. Denker's patients—namely, in no less than 77·7 per cent., the disease commenced between the ages of 20 and 50 years. 26 out of the 306 cases were affected in the second decade and 34 (or 11·1 per cent.) after the fiftieth year, while eight patients could give no history. Chill is credited with a large share in the causation of otosclerosis, while by other writers something more than a casual relationship is ascribed to syphilis. Beyond these three factors no other cause—casual or otherwise—is adduced. Under the heading of functional testing we find, carefully described in historical precedence, all the various aural tests and their explanations, so far as our present knowledge goes. In the symptomatology and progress of the disease the author refers, amongst other things, to the temporary character of the disturbances of equilibrium as well as to their relative rarity in otosclerosis, as compared with diseases of the middle ear proper. He enters fully into the various theories extant as to the causation of paracusis Willisii and gives preference to that which assumes that people speak more loudly in a noise. A very useful and short summary of the diagnosis is given. The most important portion of the book, however, is a careful and elaborate description of the pathological, macroscopical and microscopical, conditions found in all the hitherto reported cases. This is by far the most complete summary extant. The concluding chapter of the book deals with what the author very pertinently describes as "various therapeutic experiments."

We have dwelt at unusual length on the contents of this work, for we feel that it would not have been possible otherwise to do justice to the result of the important labours of the author. That the last word has not yet been spoken on this subject there is no question. But to all those who are interested in the advancement of otology, whether it be from a scientific standpoint or from the desire to be able to afford relief to the numerous sufferers from this insidious complaint, Dr. Denker's book will prove of the utmost value.

The Elements of the Science of Nutrition. By GRAHAM LUSK, Ph.D., M.A. Illustrated. London and Philadelphia: W. B. Saunders Company. 1906. Pp. 326 Price 12*s.* net.

IT is a far cry to the time of Sanctorius of Venice in the early part of the seventeenth century. He, however, was the first to apply the balance, or rather a steel yard, to the study of the "insensible perspiration." The modern science of nutrition began with Lavoisier who with Laplace made experiments on animal heat and respiration. Lavoisier declared that life processes are the result of oxidations with the resulting formation of heat. Liebig received part of his training in Paris in 1822. His researches in Munich and elsewhere fired Voit to study the problems of metabolism. With the name of Voit must be associated that of Pettenkofer who made famous the Munich School of Metabolism. The work has been carried forward with extraordinary success by Rubner, a former pupil of Voit. Lavoisier established the fundamental fact that the oxygen inspired and the carbon dioxide given off depend primarily on food, work, and temperature. Liebig devised new methods for organic analysis and the study of the carbon compounds. With the fact established that the nitrogen in the urine and the fæces could be made a means for the determination of protein metabolism the next step was gained. Meat contains 16 per cent. of nitrogen or 1 gramme of nitrogen in 6·25 grammes of proteid, therefore for every gramme of nitrogen in the excreta 6·25 grammes of protein were destroyed in the body. The next question was the determination of the total carbon excreted, which problem was attacked by Voit and Pettenkofer. As to the manner of metabolism, it was shown that the metabolism in the body is not proportional to the combustibility of foodstuffs outside the body, for in the body protein is burned with greater ease than are carbohydrates, while fat is the most difficult of all. It is the metabolic action of the cells which determines the amount of oxygen absorbed. It is not due to a lack of oxygen that sugar does not burn in diabetes, or cystin in cystinuria. The cleavage of these substances into bodies which can unite with oxygen cannot be effected and hence they cannot burn. Respiration does not regulate metabolism, it is metabolism which determines respiration partly by its production of carbon dioxide. Metabolism may be defined as the chemical changes of material under the influence of living cells: "it vivifies the energy potential and chemical compounds."

After an introductory chapter the author sets forth his subject under the following heads: Fæces, Starvation, Temperature, Influence of Protein Food, Specific Dynamic Actions of Foodstuffs, the Influence of Fat, Carbohydrates and Mechanical Work, Normal Diet and Food Requirements during Growth, Metabolism in Anæmia, High Altitudes, Myxœdema, Exophthalmic Goitre, Diabetes, Phosphorus Poisoning, Fever, Gout, and Purin Bodies, and concludes with a study of the theories of metabolism.

Normal fæces are not, as is often stated, composed chiefly of residues of undigested food; they consist chiefly of unabsorbed residues of intestinal secretions. In herbivora, however, they consist largely of undigested or indigestible food, and indeed there is as much nitrogen in the fæces of the cow as in the urine. In connexion with diabetes it is interesting to note that β oxybutyric acid and acetone are present in large amount in extreme hunger. The blood in starvation retains its normal composition as regards its nutrient constituents except that it carries fat in increased quantity to the cells. The plasma is very like normal plasma except that there is a slight increase of globulin. The temperature of a fasting man is usually normal and falls only a few days before death. The regulation of temperature is essentially controlled through the nerves. If a rabbit be cooled to the temperature of 19° C. the heart beat may fall to one beat per minute. The "law of superficial area," known as "Rubner's Law," is not often mentioned in English works. It states that the metabolism is proportional to the superficial area of the animal—i.e., it depends on the amount of heat lost at the surface—and its variation in accordance with this law is necessary for the maintenance of a constant temperature.

There is a careful review of the question as to the origin of fat from proteins. This does take place, probably through an intermediate sugar. As to exercise, we find the

following (p. 176): "Sometimes muscular exercise is mistakenly considered as favouring intellectual activity. Yet college presidents are not selected from the ranks of prize-fighters." In discussing Chittenden's diet it is pointed out that a jaded appetite is an automatic signal of excess (p. 184) and that Chittenden is in error in the commendation of from 2500 to 2600 calories as an ample diet for a soldier at drill. As to German beer, it "contains 3 to 4 per cent. of alcohol and 5 to 6 per cent. of extractives. It yields 450 calories to the body, only half being derived from the alcohol, the rest from the dextrose and proteid-like extractives. Here is a material whose 'fattening' properties may be very highly considered." The chapter on food requirements during growth is of interest both to the physiologist and to the physician.

The saying of Pflüger that "the atmosphere in which one lives is really the air in our alveoli" is made use of to illustrate the respiratory phenomena at high altitudes. There is a very careful discussion of diabetes. The *piqûre* experiment of Bernard led many to attribute its origin to nervous causes. It is otherwise: (1) either the organism cannot burn sugar, or (2) some tissues may lose their sugar-retaining functions, and therefore the author states that it would be well to distinguish between glycosurias where the "sugar-holding" capacity of organs has been diminished and those in which the "sugar-burning" capacity has been affected.

The author quotes in full Minkowski's rules for gout. In fever, because of the specific dynamic action of proteins, Rubner would restrict the use of proteins and substitute carbohydrates as the source of energy. During the heat of summer decreased protein diet will markedly improve the personal comfort by decreasing the heat production and therefore sweat production. Obese people work under great disadvantages in a hot and moist climate; the profuse perspiration explains the desire for water to drink. In connexion with the chapter on purin metabolism we have failed to find a reference to the work of I. Walker Hall. As to gout, "clinical experience teaches that the predisposing causes are excessive eating, little muscular exercise, the abuse of alcoholic beverages, and lead poisoning."

In spite of the necessarily numerous tables of figures the work is excellent reading and represents a careful study of the modern facts of metabolism.

LIBRARY TABLE.

The Chemical Basis of Pharmacology. By FRANCIS FRANCIS, D.Sc., Ph.D., Professor of Chemistry, University College, Bristol; and J. M. FORTESCUE-BRICKDALE, M.A., M.D. Oxon., Demonstrator of Physiology, University College, Bristol. London: Edward Arnold. 1908. Pp. 372. Price 14*s.* net.—The appearance of this book is a sign of the progress that is being made in a much-needed direction—the replacement of empirical by rational methods in pharmacology. There is no study of greater interest or importance to general medicine than that of the relationships existing between the chemical structure and the physiological action of drugs. Much valuable work, as this book shows, has been done, but more remains, and we cordially agree with the authors that the student of medicine should have impressed upon him more than has hitherto been the case the bearing of structure, and especially that of organic compounds, on pharmacology. The quotation from Locke's "Human Understanding," Book IV., Chapter iii., Section 25, which is given on the page preceding the preface, is appropriate. "Did we know," it commences, "the mechanical affections of the particles of rhubarb, hemlock, opium, and a man, as a watchmaker does those of a watch, whereby it performs its operations and of a file which by rubbing on them will alter the figure of any of the wheels, we should be able to tell beforehand that rhubarb will purge, hemlock kill, and opium make a man sleep." It is striking to compare with this some of the modern scientific statements scattered through the pages of this book, such, for example, as the following: "When the amido group replaces a hydrogen atom in the benzene nucleus substances of the nature of aniline result and a completely new and valuable set of pharmacological properties appear; this observation has formed the basis of a large group of so-called antipyretics." "The entrance of a second amido group gives rise to powerfully toxic substances." "The entrance of the hydroxyl group into benzene with the formation of phenol causes a great increase in antiseptic and toxic properties." "In the aldehydes the replacement of oxygen by sulphur is followed by a rise in toxic properties; paraldehyde, for example, does not act upon the heart, whereas tri-thioaldehyde also possessing hypnotic properties is a powerful heart poison.' "The replacement of hydrogen by the halogens causes an increase in narcotic action; thus sodium acetate is quite inert but sodium monochloracetate has pronounced narcotic properties." These few examples serve to show the high purpose of the book and though clinical experience may be the only test of the value of a drug, yet, as the authors point out, the probable physiological action may often be fairly accurately gauged by a consideration of its chemical structure. It seems probable, too, that if greater regard had been paid to the relationship of structure to physiological action it might have been seen how superfluous or unnecessary was the introduction of a great number of synthetic remedies. The book should appeal to all those readers who take seriously to heart the problem of establishing therapeutics firmly on a scientific foundation.

The Illustrated Medical Dictionary. By W. A. NEWMAN DORLAND, A.M., M.D. Fourth edition, revised and enlarged. London: W. B. Saunders Company. 1907. Pp. 836. Price 19*s.* net; with thumb index, 21*s.* net.—This medical dictionary is in every way a sound one and the appearance of a fourth edition proves that its author intends to keep it up to date. We are told that 2000 new terms have been included in the present issue and six new coloured plates are given, including that of the Leishman-Donovan bodies which originally appeared in this journal. The plate of the reconstructed human embryo of 26 days (after F. Mall) forms an excellent diagram. Several well-illustrated anatomical tables are given. We have tested many of the definitions and failed to find an error in them; the pronunciations given should be useful to the student who has become rusty in his Greek. It is embarrassing to watch the growth of medical nomenclature. We wonder how many people when asked, "What is pneumo-thermomassage?" could answer glibly, "The application to the body of hot condensed air that has been medicated."

Atlas der Deskriptiven Anatomie des Menschen. (*Atlas of Descriptive Human Anatomy.*) By Dr. J. SOBOTTA, Würzburg. Third section. Part I., Nervous and Vascular Systems. Part II., Sense Organs and Lymphatics. Munich: J. F. Lehmann. 1907. Part I., M.16; Part II., M.6. *Grundriss der Deskriptiven Anatomie des Menschen.* (*Essentials of Human Anatomy.*) M.16.—The last two instalments, together forming the third section of Dr. Sobotta's atlas, fully maintain the excellence attained by the previous parts. Of the instalments now under notice the first illustrates the nervous and vascular systems, whilst the second is devoted to the sense organs and lymphatics. The illustrations, as before, are beautifully reproduced and are from paintings by Karl Hajek, the mention of whose name is sufficient tribute to their excellence. We note with satisfaction that the colour of the muscles has been considerably toned down in comparison with that adopted in the earlier parts. Of the plates of the vessels and nerves, those illustrating the anatomy of the triangles of the neck and the blood-vessels of the pelvis strike us as being amongst the best and the most useful. The central

nervous system is profusely illustrated and it is refreshing to find that the picture of the spinal cord and nerve roots is true to nature, bringing out the varying sizes of the different roots. The diagram of the various conduction tracts given in Fig. 600 is not easy to unravel; it might be improved. The final section illustrates the anatomy of the eye, the ear, the skin, and, in an appendix, the lymphatic system. The last might easily and with advantage be more liberally treated. As with previous sections, a handbook of Essentials is supplied. This is equal in size to this instalment of the Atlas and contains the important details of the subject with due reference to the appropriate plates. Without professing to be unduly exhaustive the letterpress faithfully fulfils the object in view.

Stoichiometry. By SYDNEY YOUNG, D.Sc., F.R.S., Professor of Chemistry in the University of Dublin. With 88 figures in the text. Together with an Introduction to the Study of Physical Chemistry by Sir WILLIAM RAMSAY, K.C.B., F.R.S. London: Longmans, Green, and Co. 1908. Pp. 381. Price 7*s.* 6*d.*—This book forms yet another admirable member of the series of text-books of physical chemistry published under the direction of Sir William Ramsay. In such excellent hands we may expect to find that the subject is brought up to the date of the most recent additions to knowledge and that expectation is fulfilled. Sir William Ramsay says that it is hoped by issuing a series of volumes instead of a single comprehensive treatise to keep abreast of the vast subject of physical chemistry, for as the edition of each volume is exhausted it will be possible for each author to bring his subject up to date. The author of the present volume, Professor Young, has been engaged in considerable research work involving important theoretical considerations and he has brought forward many important experimental facts which strengthen the evidence in favour of given theories. His selection, therefore, as the writer of a text-book on stoichiometry, or the methods used to determine atomic and molecular weights, is justified. The choice has, at any rate, fallen upon an author who has proved in this book that he can write clearly and intelligibly on a difficult subject. Modern students of chemical science are fortunate in being able to obtain a text-book presenting so attractively the latest additions to knowledge (together with historic references as to how such knowledge has been acquired) on the important questions of the determination of atomic and molecular weights.

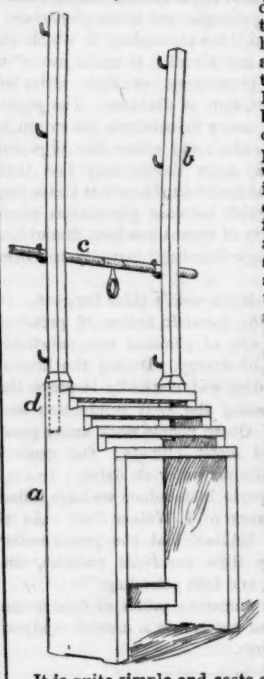
JOURNALS AND MAGAZINES.

The Quarterly Journal of Microscopical Science. Edited by Sir RAY LANKESTER, K.C.B., F.R.S., with the coöperation of ADAM SEDGWICK, F.R.S., SYDNEY J. HICKSON, F.R.S., and E. A. MINCHIN, M.A. With lithographic plates and text figures. London: J. and A. Churchill. March, 1908. New series, No. 206 (Vol. LII., Part 2). Price 10*s.*—The articles contained in this part are: 1. Investigations on the Development of Trypanosomes in the Tsetse Flies and Other Diptera, by E. A. Minchin, professor of protozoology in the University of London (with Plates 8–13 and two text figures). 2. The Nematocysts of Turbellaria, by C. H. Martin, B.A., Magdalen College, Oxford (with Plate 14). The presence of nematocysts in turbellaria is, in the author's opinion, due to the transference of the nematocysts of a cœlenterate to the animal which preys upon it. This conclusion is arrived at from the consideration of three facts: (*a*) that the nematocysts of Microstoma lineare are normally derived from the hydra upon which it feeds; (*b*) that if the microstoma is fed upon cordylophora nematocysts are found under the skin; and (*c*) that the nematocysts of Stenostoma Sieboldii are derived from the cœlenterata on which it feeds. The presence, therefore, of three nematocysts in a turbellarian offers no ground for the generally accepted homology between Nematocysts and Rhabdites. 3. Deridoeides Gardineri: A Doridiform Cladohepatic Nudibranch, by Sir Charles Eliot, Vice-Chancellor of the University of Sheffield, and T. J. Evans, lecturer on zoology in the same University; with Plates 15 and 16 and one text figure.

New Inventions.

A NEW APPARATUS FOR WEIGHT EXTENSION.

HAVING recently tried in vain to obtain from instrument makers a simple and at the same time universally applicable device for applying weight extension to fractured limbs I have had made for my own use an apparatus which is shown in the accompanying illustration. It consists of (*a*) a wooden base; (*b*) two wooden uprights carrying a series of hooks in pairs, which support at a convenient height (*c*) a transverse iron bar on which slides a ring carrying a pulley. The special features of the wooden base are that it presents on the side facing the bed a series of steps, on one or other of which the foot of the bed can be supported, thus obviating the use of blocks. Moreover, the apparatus is firmly fixed by the superimposed weight of the bed. The uprights slide into sockets (*d*) at the upper angles of the wooden base and can be removed when the apparatus is not in use, so that the whole can be packed into a space measuring about 4 feet × 2 feet 6 inches × 1 foot. The position of the pulley when the bar is placed on the highest pair of hooks is well adapted for extension with Hodgen's splint. The apparatus can also be used at the side of the bed to apply extension to a fractured arm.

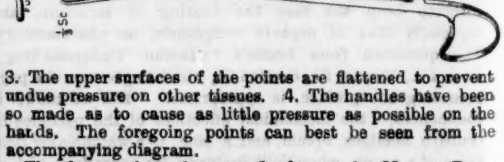


It is quite simple and costs only 23*s.*

Oxford. H. P. SYMONDS, F.R.C.S. Edin.

A NEW VULSELLUM FORCEPS.

THE annexed illustration represents a new vulsellum forceps which I have devised and for which the following advantages are claimed: 1. The points interlock and therefore cannot give, especially on side pressure. 2. The under surfaces of the points are flattened, which prevents them pulling through the tissues whether it be the cervix when required for such operations as curetting and dilating, or trachelorrhaphy, seizing the fundus of the uterus and holding it securely, or for perineorrhaphies, &c.



3. The upper surfaces of the points are flattened to prevent undue pressure on other tissues. 4. The handles have been so made as to cause as little pressure as possible on the hands. The foregoing points can best be seen from the accompanying diagram.

The forceps have been made for me by Messrs. Down Bros., Limited, 21, St. Thomas's-street, London, S.E., from whom they can be obtained.

Dublin. J. S. ASHE, L.R.C.P. & S. Irel.

THE LANCET.

LONDON: SATURDAY, APRIL 4, 1908.

The Surgery of the Spinal Cord and its Membranes.

THE lesions of the spinal cord are many but only a few of them are amenable to surgical treatment. Yet the scope of surgery in this region of the body is steadily extending and with the increased aid afforded by improvements in diagnosis the results in the future will be better even than those obtained at present. Mr. DONALD J. ARMOUR took for his subject in the Hunterian lectures, which he has recently delivered at the Royal College of Surgeons of England and which have been published in THE LANCET,[1] the Surgery of the Spinal Cord and its Membranes and all who have worked at the surgery of this portion of the body will read with great interest the reports of his lectures. It was quite impossible for him to compress into these lectures all that could be said on the surgery of the cord and its adnexa and Mr. ARMOUR was therefore compelled to select certain portions of the subject. He devoted one lecture to spina bifida, one to fracture-dislocation of the spine in so far as it relates to injury of the spinal cord, and in the third lecture he spoke of tumours of the cord.

Spina bifida is a congenital condition of no small importance; if left untreated the majority of cases will go on with certainty to a fatal ending but in some instances at least surgery can offer a chance, and often much more than a chance, of a complete cure of the condition. Mere palliative treatment is all that can be employed for many of these patients. MORTON'S injection method, at one time widely employed, was approved by the committee appointed by the Clinical Society of London in 1885; in the report issued by that committee nearly 50 per cent. of cures were reported but the cases which are the most suitable for MORTON'S method are the simple meningoceles and these are the cases which are most suited for excision. Moreover—and Mr. ARMOUR lays stress on this fact—it is impossible, in spite of the indications from translucency described in many of the books, to diagnose what variety of spina bifida is present in any particular case until the sac has been opened. HILDEBRAND and MUSCATELLO have shown that myelocystoceles are often mistaken for simple meningoceles and there can be little doubt what would be the result of injecting MORTON'S iodo-glycerine solution into a myelocystocele. Excision is now almost universally adopted except when that procedure is impossible on account of ulceration and threatening rupture. In such cases as these Mr. ARMOUR considers that injection may be tried. The chief cause of death in untreated spina bifida is a septic meningitis produced by the penetration of micro-organisms through an ulcerated or ruptured sac wall; so, too, after operations on spina bifida the chief cause of death is a septic meningitis caused by an infection of the wound. The utmost cleanliness, the most perfect asepsis, is the first essential for any operation for spina bifida, for if the slightest sepsis is present healing by first intention cannot occur and the result will be failure. When the sac is opened, if no nerve roots are present it is an easy matter to close the sac. If, however, nerve roots are found in the sac they must be dissected off the sac wall and replaced, unless, indeed, they end in the sac, and then they are functionless and they may be removed. The chief contra-indication of the operation of excision is paralysis, especially if there is complete paraplegia with involvement of the sphincters. Sometimes it is true that the paralysis is due to tension of the nerve elements and then if the tension is relieved some improvement may be expected. The cases of partial paralysis may reasonably be looked upon as suitable for operation. The results of excision must be considered in connexion with the results of cases in which no operation is performed. The majority of cases of spina bifida if untreated die during the first year, and especially during the first three months of life. The death-rate of operation is much higher if the operation is performed during the first few months than in those cases in which the operation is postponed till the child has survived for five or six years. In 1905 MOORE collected all the reported cases, 378 in number, though doubtless many operations have never been published and unsuccessful cases are certainly less likely to appear in print than those which have ended favourably. Of these 378 cases, the mortality before 1885 was 30 per cent.; since then the death-rate has been reduced to 24 per cent. The longer that cases are kept under observation after operation the greater the death-rate would probably be. Post-operative hydrocephalus is by no means rare but an explanation of its occurrence is hard to find; it may follow operations for spina bifida which have been apparently entirely successful. In all forms of spina bifida except pure meningocele the prognosis of operation is exceedingly grave but the results of non-operative treatment are graver still.

In his second lecture Mr. ARMOUR dealt with the lesions of the spinal cord occasioned by fracture-dislocation of the spine. In any case where there has been fracture of the vertebral column or dislocation, or a combination of the two, the cord may suffer injury by compression, contusion, laceration, or complete division. Even when extensive injury is present the cord on external examination may show nothing; this fact is obviously of the greatest importance, for the surgeon cannot be absolutely certain of the condition of the cord at an operation. Even complete dislocation with fracture of the upper two cervical vertebræ is not always immediately fatal; this is because of the large size of the neural canal in the cervical region. In the dorsal region extensive injury to the cord follows. The diagnosis between partial and total transverse lesions of the cord is very difficult and Mr. ARMOUR shows that the "classical" signs of a total transverse lesion are very untrustworthy. Even when there is complete paralysis of motion and sensation below the lesion the deduction is not justifiable that the lesion is total, for recovery may follow the occurrence of these symptoms

[1] THE LANCET, March 7th, 14th, and 21st, 1908.

when they have been due to pressure only. A distinction must be drawn between a total transverse lesion anatomical in nature and one which is merely physiological. Complete physiological abolition of function may occur without actual destruction of the nerve elements and these nerve elements may recover more or less completely. In this connexion the point of the greatest interest is the question of the possibility of regeneration of a sutured cord. A peripheral nerve if sutured will unite and in favourable circumstances it may recover completely. Can a similar recovery take place in the spinal cord after complete division and suture? Most observers have agreed that in man such regeneration cannot take place but recently two cases have been reported in each of which the spinal cord had been divided by a bullet and had been sutured. In both a remarkable degree of recovery was reported, so the question has had to be discussed anew. Many experiments have been performed on animals and none of these experiments provides any definite evidence of regeneration of the divided cord, and it is suggested that as the central nerve fibres do not possess a neurilemma sheath from which nerve regeneration in peripheral nerves mainly, if not solely, occurs this is the reason for the non-regeneration of the cord. A few tracts of fibres of the cord which are of undoubted peripheral type may attempt to regenerate but the attempt appears to be abortive. The clinical evidence is even less convincing than the experimental and at present it can only be said that recovery of function after total loss indicates that the loss of function must have been due to pressure or œdema or some other removeable cause. On what cases of fracture-dislocation of the spine should the surgeon operate? The main object of an operation in fracture-dislocation is to relieve pressure, whether from bone or from blood clot. If the pressure be allowed to continue a degeneration will assuredly result which will be as serious as though the cord had been destroyed by the original injury. It is true that, so far as we know, no operation will restore a cord in which complete transverse section has taken place; but as we cannot determine in a reasonable time whether a total transverse lesion is present or not we should surely, urges Mr. ARMOUR, give the patient the benefit of an operation which experience shows neither materially endangers his life nor adds to his discomfort but lessens his pain. The tendency at the present time is to select only the exceptional case for operation. Mr. ARMOUR endorses WALTON when he says, Should we not rather select as unsuitable for operation the occasional case in which definite contra-indications for operation exist? In fact, the rule should be to operate, the exception to refrain from operation.

In the last lecture was considered the surgery of tumours involving the spinal cord. These may be divided into those primarily in the coverings of the cord, only involving the cord secondarily, and those originating from the spinal cord itself. Mr. ARMOUR described the various forms of growth arising from the vertebral column which may involve the spinal cord and also tumours of the membranes and of the cord itself. He quoted statistics which show that extramedullary tumours are over four times as frequent as the intramedullary and of the extramedullary the intradural are twice as frequent as the extradural. Of intramedullary tumours it is worthy of note that tubercle and gumma have the shortest course, nine months and seven and a half respectively, while sarcoma and glioma have a course of two years or more. In all cases, except those in which the symptoms are due to a syphilitic mass, the only possible treatment which can be of any avail is operation, and its success will depend partly on the nature and extent of the growth but in great part on the care and skill of the operator. With an account of paraplegia due to hydatid disease and its treatment these valuable lectures ended.

Three Decades of Scientific Work in Oxford (1650–1680).

THE middle of the sixteenth century saw the publication of the work of VESALIUS of Padua which laid the foundation of modern anatomy, and its great truths were taught by his successors, COLOMBO, FALLOPIUS, and FABRICIUS, in spite of ecclesiastical opposition. Through WILLIAM HARVEY the new biological knowledge was transplanted from Italian to English soil. The publication of HARVEY'S work in 1628 is one of the great landmarks of physiological discovery. The latter half of the seventeenth century was a fertile period in the progress of natural knowledge by means of observation and experiment, and with it are associated in Oxford the names of ROBERT BOYLE, CHRISTOPHER WREN, and THOMAS WILLIS, and two others, both Cornish men, who were connected with the University of Oxford—viz., RICHARD LOWER (1631–1691) and JOHN MAYOW (1643–1679). Professor FRANCIS GOTCH [1] has written an eloquent discourse on the work of these two men, while the Alembic Club of Edinburgh [2] has recently published an excellent translation of the medico-physical works of JOHN MAYOW which consist of five treatises written in Latin. JOHN MAYOW was one of the greatest scientific men of the seventeenth century, or indeed of any century. LOWER, "that expert anatomist," whose name is still preserved in the name "tubercle of LOWER," helped in the anatomical work of R. WILLIS who was then professor of natural philosophy in Oxford. In 1665 LOWER demonstrated the transfusion of blood from an artery of one animal into the vein of another animal, and indeed he was in the front rank of experimental physiologists. In his work on the heart and on the colour of the blood he accepted HARVEY'S view of the circulation of the blood and pointed out that the heart is muscular and, like all muscles, is able to contract. He thought that the movements of the heart were dependent on a nervous flow through the vagus nerves going to the heart, for he noticed that ligature of the eighth pair caused the heart beat to become irregular and feeble. This experiment was not repeated until 1845, when the brothers E. H. and W. WEBER showed that these nerves were excited by the application of a ligature, which irritation caused inhibition of the heart's activity. LOWER also noticed by means of experiments on animals that the colour of the blood going to the lungs is dusky and bright red after its transit through the lungs. This fact was shown to MAYOW. He observed the dark

[1] Two Oxford Physiologists: Richard Lower, 1631 to 1691; John Mayow, 1643 to 1679. By Francis Gotch, M.A., D.Sc., F.R.S., Waynflete Professor of Physiology, University of Oxford.

[2] Alembic Club Reprints, No. 17. Medico Physical Works. Being a translation of Tractatus Quinque Medico-Physici, by John Mayow, LL.D., M.D., 1674. The Alembic Club, Edinburgh.

venous colour of the blood in suffocation and noticed that the bright red colour could be restored if air was blown through the lungs—in the absence of respiratory movements—so that the air alone was the cause of the change of hue. Shed blood, he saw, became bright red on the surface, and from his observations and experiments LOWER concluded that the purpose of the respiratory movements was to bring air to the blood and to make that fluid fit for the heart and other organs—a quality denoted by its redness. The blood absorbs air as it passes through the lungs, and when the "air has escaped into the parenchyma of the viscera the venous blood being deprived of it appears more dusky and black."

But a greater than LOWER was MAYOW whose books were not much noticed in his own time and indeed a little later they seemed to have been almost forgotten. S. HALES is the only writer of the eighteenth century who refers to them in his "Vegetable Statics" (1727). They were reprinted in Paris, Geneva, Jena, and the Hague. But after the great revolution in chemical theory which followed the discovery of oxygen by PRIESTLEY and LAVOISIER MAYOW'S work was unearthed and it was seen that the new chemistry was to be found in this old and largely forgotten work. THOMAS BEDDOES in 1790, SCHERER in 1793, and G. B. YEATS in 1798 set forth the claims of MAYOW, but these attempts to make known MAYOW'S claims met with no great success. MAYOW set forth that air is impregnated with a vital, igneous, and highly fermentative spirit and he begins his fifth treatise with a history of nitre, this wonderful salt which makes no less noise in philosophy than in war and fills the universe with its sound. The nitro-aerial salt obtained from nitre becomes food for fires and also passes into the blood of animals by respiration, and is "also the primary instrument of life and motion not only in plants but also in animals." He proved by beautiful and convincing experiments that air contains this special "nitro-aerial" constituent which could unite with what was called salino-sulphurous matter—what may be called the combustible principle, without any suggestion that it contains sulphur in the modern sense of this term. Starting from this fact MAYOW proved that something was taken from the air by the respiration of animals—this was his nitro-aerial constituent—and this it was and not the air as a whole which was a necessity of life; the great bulk of the air was not necessary, and this small part was as necessary for life as for combustion. In our tissues a process resembling combustion, as shown by the production of animal heat, was continually going on. He concluded that it is in the muscles that this animal heat is chiefly produced. It was not until 1845 that HELMHOLTZ demonstrated that muscular motion was associated with the oxidation of carbon compounds and the production of heat. One of MAYOW'S most striking observations is that the nitro-aerial supply to the fœtus must be provided by the respiration of the mother and pass from her blood from the maternal part of the uterine wall. What he failed to recognise was the product of the combustion in the tissues—viz., the giving out of carbon dioxide, or "fixed air," which was discovered by BLACK in 1752.

The study and teaching of history have of late years entered upon a new phase. Many of the best books on history are not in the words of any modern writer but consist of carefully collated extracts from the writings of men who lived in the time with which the particular period treated deals. There are two admirable modern histories of England appearing in instalments, and both show the qualities of learning and philosophical research, but apart from these our historical reading is better conducted by the help of documents written at the times of the events portrayed. Such works as "Leading Documents of English History" and the valuable series entitled, "English History by Contemporary Writers," bring before us our "rough island story" in a more lifelike manner than even the brilliant antitheses of MACAULAY. And so, too, with the history of science and of those branches of it with which we as medical men are the more concerned. As Professor GOTCH remarks: "The study of the lives and works of our predecessors is as imperative for scientific men as it is for historians, whilst the duty of undertaking it receives an additional sanction, when, as in the case of LOWER and MAYOW, their deeds lie buried with their bones in tombs which have been suffered through neglect to fall into decay."

The Outbreak of Enteric Fever at Peterhead.

REPUTATIONS may be of the enviable or of the unenviable order, and up to quite recently the fishing town of Peterhead on the rock-bound coast of eastern Scotland, northwards of Aberdeen, has been almost world-renowned for its vast herring fishery, an industry which in years gone by was preceded by that of whaling. Now, unfortunately, it has established an unenviable notoriety for enteric fever, and the side-lights which have been thrown upon its sanitary condition by the detailed investigation which has been made by Professor MATTHEW HAY make us wonder why its inhabitants have for so long escaped other visitations of a similar nature. From May to October of last year there occurred no less than 425 cases and 23 deaths in this population of some 16,000, the number of cases varying from 30 to 40 per week during the months of May, June, and July. The prolonged duration of the outbreak appears to us to have been one of its most remarkable features, as in this respect it is somewhat unlike other outbreaks. As was to be anticipated, the investigation of this epidemic was beset with many difficulties, partly owing to the stress of administrative work consequent upon the outbreak and partly owing to the difficulty of obtaining accurate data as regards certain particulars. There appears to have been no question whatever as to the fact that the water-supply was, as a whole, open to pollution from the privy and ashpit refuse which was deposited upon parts of the agricultural land from which the water was derived, and it is clear, bearing in mind ambulant cases of enteric fever, that at any time specific pollution may have reached the water. Still, Professor HAY furnishes evidence which points to the conclusion that the water was not a potent factor in the spread of the disease, although in the first instance he evidently regarded the outbreak as being water-borne. The case against the milk was, however, a stronger one and Professor HAY is inclined, on the whole, to regard the outbreak as having in the first instance been milk-borne and as having been subsequently kept going by "contact" or secondary cases. With reference to the actual infection of the

milk-supply in question Professor HAY attributes it to the return to the farm on April 28th or 29th of a maidservant who had been recently nursing her mother who had been ill with enteric fever. This servant did not herself suffer from enteric fever, nor is it apparently claimed that she was a "carrier" case, but she came directly to the dairy from a non-disinfected house wherein her mother, who still had enteric fever bacilli in her urine, resided and at once began to take part in the work of the dairy. Professor HAY regards the chain of circumstances as completing the proof of the immediate origin of the epidemic in the infection of the milk-supply in question. We should rather hesitate to use the term "proof" and should prefer to regard infection of the milk in the manner suggested as the most probable theory to account for the origin of the outbreak. The epidemic once started was kept alight, it is thought, by secondary cases and the report contains numerous illustrations of what are regarded as "contact" cases. We have no doubt that enteric fever is more communicable from person to person than is generally believed, but of course in connexion with this term "communicable" there have also to be considered cases infected by food contaminated by the patient or the attendant and consumed by other dwellers in the invaded house. This outbreak at Peterhead has been a difficult problem to unravel and Professor HAY is to be congratulated upon the energy and ability which he has displayed in dealing with it, more especially as he was only consulted when the outbreak was apparently on the wane. We are glad to hear that the Peterhead town council is taking active steps with regard to the improvement of the water-supply which is clearly liable at any moment to become specifically polluted; however small may have been the part which it played in the recent epidemic it might otherwise be responsible some day for an outbreak of even greater magnitude. It is useless to waste time in chemical and bacteriological examinations and in discussions as to their meaning while a catchment area is being manured with privy refuse. But how many more towns in Scotland are there with water-supplies in an equally precarious position and how many of them will have to wait until an outbreak of enteric fever draws attention to the circumstance?

Annotations.

"Ne quid nimis."

THE CASE OF CROPPER v. STOKES.

IN another column will be found a forcible but moderately expressed letter from Dr. B. G. Morison setting out the circumstances of the treatment received by Dr. Henry Fraser Stokes, one of the best-known and most respected practitioners in the North of London, at the hands of Mr. Edge, a county court judge. We need not repeat the story, firstly because Dr. Morison's sketch of it contains all the essentials, and secondly because (to the grave disadvantage of Dr. Stokes) every newspaper in England seems to have contained a more or less garbled account of the case. Judge Edge appears to have said that he did not shrink from his responsibilities when he calmly accused a well-known medical man of perjury, but that is exactly what he did do when he refused a request for leave to appeal. He was courageous enough in his own court, where his conduct could not be brought into question, but he was so particularly timid as to what other people might say of his attitude that he has decided to take care that it is not discussed. We understand that Dr. Stokes was represented in this case by the Medical Defence Union. The Medical Defence Union cannot possibly afford to allow the case to remain here. If the Union does not take some steps to see that reparation is made to Dr. Stokes for the treatment which he has received its position will be seriously affected. We suppose it is open to Judge Edge to say publicly that he has made a mistake and has been betrayed into an accusation which is only not laughable because of its cruelty to an honourable gentleman. If nothing can be done by legal procedure, and if Judge Edge makes no attempt to set right the mischief which he has done, we trust that the Medical Defence Union will take the responsibility of telling the true story publicly.

INVALID TRAVEL IN ITALY.

FROM its headquarters in Rome (writes an Italian correspondent) the "Society for Encouraging the Influx of Foreigners" appeals for such hints or indications as may assist it to "welcome the coming," and not prematurely to "speed the parting," guest. It professes to be fully alive to the need for improved railway service, which, to do it justice, it has succeeded in making more punctual, though reform is still needed in other details. Prominent among these latter are the means available on departure and arrival for the transport of the physically infirm from the cab or hotel omnibus to the station, and from this to the compartment in the railway carriage. As it is, the bed-ridden or the cripple is liable to undergo extreme discomfort before being fairly accommodated for his journey—nothing but previous arrangements of an elaborate and costly kind sufficing to save him from exposure that he would rather not court or from pain that he would gladly be spared. Even in the case of sufferers, let us say, from rheumatoid arthritis, whose walking power is so impaired that they have to be carried, their fate on an arrival or a departure platform is often such as to evoke commiseration. No skilled help is at hand unless provided for in advance by complicated and often expensive "combinazioni"; delay, frequently trying when the train is being precipitately evacuated or wildly taken by storm, is quite inevitable; and when after a long wait, either in the open air or under a draughty "tettoia" (roof) exposed to the cold if not the rain, the sufferer at length succeeds in getting a "portantina" (sedan chair) and "facchini" (porters) capable of carrying it, he is charged so exorbitantly and, rather than make a "scene," has to pay such a round sum that he is prone to make a mental vow never to incur such another experience. Few English-speaking practitioners in Italy can fail to recognise the picture, just sketched, of what the lame, the halt, or the bed-ridden have often to endure, and this in a country which justly boasts of its "Misericordia," its "Croce Verde," and its other organisations, some of them of great antiquity, for lifting, carrying, and depositing the physically incapable or infirm. The transport available for invalids at railway stations or landing piers is only such as porters can supply—porters often rough, malodorous, and strong in language rather than in limb, who insist on their extortionate demands and when remonstrated with reply gruffly: "Non c'è tariffa per ammalati" (There is no tariff for invalids). Much has been done to bring the Italian railway service up to the standard of that of other European Powers but there is much still to do, particularly in the interests of that steadily increasing contingent of the "grand' armée" of travel which is year by year attracted to the southern shores of the Mediterranean, whose presence in Italy during winter and spring is a national asset, and whose departure

for other climes she has as much to dread as (for instance) the abandonment of the "Brindisi route" for that other one by the Balkan States and Salonica.

THE SERPENT OF ÆSCULAPIUS AND SNAKE-WORSHIP.

IT has been pointed out by Dr. Boudin[1] that the worship of the serpent was so universal in antiquity that all temples came to be known as "draconia," serpent houses. However that may be, serpents were kept in many of the temples of antiquity, notably in those of Apollo, whose son Æsculapius is represented in ancient statuary carrying a serpent entwined round a staff or round his arm. The serpent, indeed, came in time to be the special mystical emblem or symbol of the Æsculapian art. The serpents of the ancient Greek temples were in all probability relics of that primitive serpent-worship which was at one time universal among prehistoric peoples and has not died out among many savage races at the present day. As "Voodoo" or "Obi" serpent-worship is still said to linger in the West Indies among the descendants of the less civilised negro slaves. In Hayti especially, where negroes were dumped down from Africa by the old slave-traders and were kept in reserve before being sold to masters in the surrounding islands, Voodoo has defied Roman Catholic missionaries and priests for ages. A French naval officer who visited the court of the Haytian potentate Soulongue in 1849 describes a Voodoo ceremony where cannibalistic and other orgies were indulged in. It is noticeable that the cock and black goat which were solemnly eaten on this occasion were both of them sacred to Æsculapius. Hence we may infer that the Æsculapian cultus was originally an innocent form of Voodoo and at the same time a primordial religion. The extreme antiquity of serpent-worship seems, indeed, to be hinted at in Genesis, where the Devil appears in the guise of the snake-god intent on the ruin of man. In the story of the Brazen Serpent healing qualities are attributed to the image.

HYSTERO-EPILEPSY IN A YOUNG MAN.

THE condition described in great detail by Charcot and his pupils under the name of hystero-epilepsy is one but rarely met with in this country and even in some of the cases recorded the phenomena did not follow the typical sequence. We have received a copy of a paper by Dr. W. Howells, read before the North Glamorganshire and Breconshire division of the South Wales branch of the British Medical Association, describing an example of this condition observed in a young man in his twenty-first year. The patient was of healthy appearance and of muscular build. He was apparently of somewhat erratic and unstable temperament, his memory was very defective, and he was at times passionate and vindictive. Having worked for two years as a miner he became subsequently baggage porter to a travelling concert troupe. He was of Bohemian and licentious habits and of sensual aspect. The family history revealed that his maternal grandmother was alcoholic and also violently hysterical, stigmata which were transmitted to the mother of the patient who, however, was himself not intemperate in regard to alcohol, being practically an abstainer. About four months before he was seen by Dr. Howells he had two fainting fits but otherwise he had not suffered from any serious illness. He showed no indication of organic visceral disease and very few hysterical stigmata, the only conditions found being defective vision with the right eye and some deficiency in the colour sense. The attack which Dr. Howells saw occurred after excessive sexual indulgence and was ushered in by a slight fit on Monday, in which he arched his back and stretched out his limbs. On Tuesday, after some violent exertion, he had several more fits of similar character but remained free until Thursday, when he had a very violent fit, after which he was seen by Dr. Howells for the first time, who found him conscious and coherent but very tender about the right groin, palpation in this region inducing a fit. Between Thursday evening and the following Sunday 80 more or less severe fits occurred, all presenting the same general features. The attacks were readily excited by the administration of food, drink, or medicine, by the striking of a clock, and by any noise. The tongue was not bitten in the fits and there was no involuntary micturition or defæcation. The sequence of the fits was as follows. There was first a period of semi-consciousness and simulated catalepsy followed by an interval with hysterical manifestations. During this period the pupils were dilated, afterwards they gradually contracted and the eyes rolled slowly upwards, ushering in the stage of violent convulsions. There was usually marked opisthotonos and sometimes the body would assume an arc of a circle towards the right. The convulsive stage was followed by a period during which the patient made curious pantomimic gestures "illustrative of his Bohemian life." After the Sunday evening no further attacks occurred. The patient was able to talk intelligently but appeared to have no recollection of his attacks. A few days afterwards he was able to proceed home. Dr. Howells saw him some months later but the man then said that he had no recollection of having seen him before, nor did he remember his illness or even the place at which it occurred. He seems to have also forgotten his pecuniary indebtedness to his medical attendant. Subsequently he enlisted in the army and was killed while serving in the South African war. During the 72 hours of his convulsive period he was given 14 drachms of potassium bromide, 11 drachms of bromidia, and 4 of paraldehyde, without any prejudicial effects. Dr. Howells rightly points out that the term "hystero-epilepsy" is a misleading one to apply to these cases, which should be described as hysteria major or, as he would prefer, convulsive hysteria. He also draws attention to some of the special features of the case under his care and notably to the marked immunity shown by his patient during the convulsive period to the effects of powerful depressant narcotic drugs.

[1] Études Anthropologiques, 1864.

A NEW OPEN SPACE FOR LONDON.

WE have already endorsed the appeal issued by the committee the object of which is to preserve part of the Grove Hall Park Estate, Bow, E. This piece of ground, the last available open space in a district where the provision of fresh air is greatly needed, is a portion of a site which originally consisted of about 12 acres of ground planted with trees. Only about three and a half acres now remain, the larger part having been cut up for building land. The London County Council has promised towards the laying out of this space as a public park and children's playground the sum of £4500, besides offering to maintain the property when acquired, while the borough council has contributed £2250. The remainder, about £2250, with the exception of £200 which are now urgently required to save the space from the builder, has been made up by public subscriptions. The Bishops of London and Stepney have given their hearty support to the appeal. The manufacturers of the neighbourhood have given their practical support and financial aid towards the carrying out of the objects of the committee, recognising as business men as well as generous donors that the health of the people is an excellent investment in the long run. As only £200 remain to be subscribed to save the space in question from being appropriated by the builder we cannot believe that those who have at heart the health and well-being of our great and growing metropolis will allow

the opportunity of acquiring a much-needed breathing-space to slip from the control of the committee. There is an increasing agitation for establishing "an arbour day" throughout England which shall be celebrated by the planting of trees for the benefit of future generations. This is an excellent movement and should be supplemented by the attempt to save from the axe as many trees at present existing as may be possible, remembering the old proverb in regard to the tree-feller, that a fool in five minutes can destroy the forethought and work of 50 years. Mr. Thomas A. Cook of the Soap Works, Bow, and Mr. George W. Paton of Fairfield Works, Bow, are the joint honorary secretaries. The joint honorary treasurers are Mr. O. E. Riche, London and South-Western Bank, Bow-road, and Mr. W. R. Few, London and Westminster Bank, Bow-road. Any of these gentlemen will gladly acknowledge contributions towards the object in question.

A DARWIN CELEBRATION AT CAMBRIDGE.

ARRANGEMENTS are being made by the University of Cambridge to celebrate on Tuesday, June 22nd, Wednesday, June 23rd, and Thursday, June 24th, 1909, the hundredth anniversary of the birth of Charles Darwin and the fiftieth anniversary of the publication of the "Origin of Species." It is proposed to invite representatives of universities and other learned bodies, together with distinguished individuals, to visit the University on the occasion. A programme of the celebration will be issued in the near future. The honorary secretaries to the movement are Mr. J. W. Clark, the Registrary of the University, and Professor A. C. Seward, professor of botany in the University.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS, 1908.

THE preliminary announcement has been issued concerning the International Congress on Tuberculosis which is to be held this year in Washington, U.S.A., under the organisation of the American National Association for the study and prevention of the disease, of which Dr. Frank Billings is president, and Mr. Theodore Roosevelt, Mr. Grover Cleveland, and Professor William Osler are honorary vice-presidents. We have already announced that the Congress will be held on Sept. 24th and the two following days under the auspices of the United States Government, seven of its nine departments having petitioned the House of Congress for authority and means to participate in the conference, while the Department of State has been authorised to invite the governments of other countries, through their ministers, to send representatives to the Congress. The programme is divided into seven sections, which are: (1) Pathology and Bacteriology; (2) Clinical Study and Therapy—Sanatoria, Hospitals and Dispensaries; (3) Surgery and Orthopædics; (4) Tuberculosis in Children, Etiology, Prevention, and Treatment (a full syllabus of the work of this section is given); (5) Hygienic, Social, Industrial and Economic Aspects of Tuberculosis; (6) State and Municipal Control; and (7) Tuberculosis in Animals, and its Relation to Man. An exhibition will gather illustrative material, appliances for treatment and so forth, from all parts of the world, including literature on tuberculosis, and readers of THE LANCET[1] have already been informed of the nature and conditions of the prizes offered in connexion with this exhibition. They may like to be reminded of the terms of membership, for it is our hope that Great Britain, which has throughout been in the van in dealing with tuberculosis, will be well represented at the Congress. Active members will pay a fee of $5 and will receive the full set of published transactions. Associate members, who pay $2 only, do not receive the transactions or vote in the Congress. An entertainment and a transport committee have been formed, which will enable visitors to the Congress to receive the benefits of special rates of travel, and a tour of many of the principal cities of the Eastern States, lasting from Sept. 21st to Oct. 10th, and including a visit to Niagara, is to be arranged. Those of our readers who have experienced American hospitality will rest assured that they will be welcomed in a very practical manner by their brothers across the ocean if they can spare the time to make an extended summer holiday. Applications for membership or for further information should be made to the Secretary-General, Dr. John S. Fulton, Colorado Building, Washington, D.C.

[1] THE LANCET, March 21st, 1908, p. 882.

THE PURIFICATION OF POTABLE WATER.

IN the *Union Pharmaceutique* a simple and apparently harmless method is given for purifying potable water. The method, as given by M. Célestin Hy, is based on that originally devised by M. Girard and M. Bordas. The water to be purified is first treated with a powder consisting of one equivalent of potassium permanganate and sodium carbonate and slaked lime, of each seven equivalents. After an interval of five minutes eight equivalents of anhydrous ferrous sulphate are added. The method is based upon the fact that potassium permanganate in an alkaline solution oxidises organic matter and destroys micro-organisms, the sodium carbonate precipitates any calcium sulphate that may occur naturally in the water, and the calcium hydrate precipitates any bicarbonate of lime that may be present. On adding ferrous sulphate the excess of permanganate is removed in the form of a dense precipitate. The water as drawn off from the precipitate is very pure and limpid and contains only a very small amount of the sulphates of potassium and sodium. The presence of these salts is not at all objectionable. In the case of the water of the Seine, containing a great number of bacteria, including the colon bacillus, M. Hy found that this process produced a perfectly sterile water. There is very little danger of using an excess of either of the powders. An excess of the powder containing potassium permanganate would impart to the finished product a noticeable pink colour, while an excess of iron would be precipitated partly by the sodium carbonate and partly by the calcium carbonate resulting from the first reaction.

THE TREATMENT OF SCARLET FEVER BY SERUMS.

SEVERAL attempts have been made to treat scarlet fever by serums, the serum of convalescents having been tried without much success and also an anti-streptococcic serum, the latter owing to the belief that the causal agent in the disease was a streptococcus. It is, however, more probable that the streptococci found in scarlet fever are a secondary infection, and though they may be the cause of some of the complications met with in severe cases, and anti-streptococcic serum may therefore be of some use, it can hardly be regarded as a specific remedy. The actual infective agent is at present unknown, the protozoal organisms described by Mallory not being as yet generally accepted. Recently Marpmann, proceeding on the assumption that the infective agent resided in the scales of the desquamative stage of the disease and that the toxins formed were present in the blood and urine of patients, has used these substances for injecting animals and has obtained from them a serum which, he states, is both protective against the disease and curative of it when it has developed. Two separate serums are manufactured, one prophylactic and the other curative. The difference in the respective modes of preparation is not stated in the articles dealing with the remedy which we have been able to obtain. From the brief account given above the serum would seem

likely to be mainly antitoxic; though if the causal agent of the disease is contained in the epidermal scales it might also possess some germicidal power. It is called "scarlatin" and is administered by the mouth in doses of three to eight minims in milk. Good results are recorded by several continental writers, of whom the most recent is Professor Monti of Vienna, so that a trial of the remedy in the fever hospitals of this country would seem desirable.

THE PEABODY DONATION FUND.

THE munificent donations and bequest of Mr. Peabody between 1862 and 1873 for the better housing of the working classes in London amounted to £500,000, and the forty-third annual report of the governors of this donation fund shows that on Dec. 31st last the amount of the fund had increased to £1,571,252. It is further stated that the fund, with its accumulations since 1873, when Mr. Peabody's bequest brought his total gift to £500,000, "shows an average profit per annum, at compound interest, of almost exactly £3 per cent." Thus the governors of the fund, by the investment of the annual net income, have been able to expend £1,500,279 on land and buildings for the purposes of the Trust, or more than three times the amount of the aggregate donations and bequest. The net income of last year from rents and interest, added to capital account, was £41,343, and the expenditure on land and buildings during the year was £41,543. The rapid and automatic growth of this fund is full of interest and cannot fail to prove a most valuable asset for the promotion of the sanitary condition of the metropolis. At the end of the year this fund had provided for the artisan and labouring poor of London 5586 separate tenements, consisting of 12,913 rooms, including 199 cottages of five rooms, 105 tenements of four rooms, 1833 of three rooms, 2550 of two rooms, and 899 of one room. The mean population of these tenements during the year was 19,737, which constitutes, however, the one disappointing feature of the recent reports of the governors of the fund. On referring to the twenty-fifth report on the fund it appears that at the end of the year 1889 the 11,275 rooms then provided had an occupying population of 20,374 persons, exceeding by 617 the number residing in the buildings provided by the fund at the end of last year. During the 18 years 1889–1907, the number of new rooms provided has not exceeded 1638; notwithstanding this addition the number of residents has declined. This decrease appears to be due: (1) to greater stringency in the prevention of overcrowding in these improved dwellings; (2) to decrease in the number of young children in families residing therein; and (3) to the fact that during recent years the additions to the tenements provided by the fund have been mainly those consisting of more than two rooms. For instance, in the report for 1907 it is stated that 117 five-room cottages out of a total of 154 on the Tottenham estate were ready for occupation in June last; and further, that 64 cottages are in course of erection on the Herne Hill estate and will probably soon be ready for occupation. It seems open to question whether the provision of suburban cottages will, from the point of view of the health of the metropolis, prove as useful as the provision of improved dwellings in central London where so large a proportion of the working poor are bound to reside. Moreover, it is stated in the last issued report that the letting of the five-room cottages on the Tottenham estate "is proceeding very slowly." The beneficial effect of these Peabody Buildings on the health of the residents, in spite of a density of population equal to 605 per acre, may be judged by the fact that the death-rate last year among the nearly 20,000 residents did not exceed 12·2 per 1000, against 14·6 in the whole of London. It appears, moreover, that the proportion of infant mortality in these dwellings did not exceed 58 per 1000 births, against 115, the mean proportion in London. Realising the fact that this fund has more than trebled in the 35 years since 1873 it is difficult to over-estimate its future effect upon the housing of the poor of London and on their health and sanitary condition.

ARTERIO-SCLEROSIS IN THE YOUNG.

IN the *American Journal of the Medical Sciences* for February Dr. F. Fremont-Smith has published an important article on arterio-sclerosis in the young. He reports a case under his own observation and exhaustively reviews the literature of this interesting subject. A male mulatto, aged 32 years, was suffering from obliterative arteritis with gangrene of the toes, which necessitated amputation. His arteries were sclerosed and beaded. He gave a history of syphilis contracted in his eighteenth year. He had a son, aged 12 years, who, by his pinched and haggard appearance, complexion, figure, and carriage, suggested an aged man. Examination showed diffuse sclerosis of all his arteries, with calcification quite as advanced as in his father; the beading could not have been greater at any age. There was no evidence of heart or kidney disease. The boy was mentally bright but physically stunted and thin, and his muscles were undeveloped. The arterio-sclerosis was thought to be due to congenital syphilis. Isolated references to arterio-sclerosis in the young may be found in literature since the beginning of the last century. Portal, in his work on anatomy published in 1803, stated that "rarely the arteries of young persons become ossified." In "Diseases of Arteries," published in 1815, Hodgson described the temporal artery of an infant, aged 15 months, "converted into a complete tube of calcareous matter." Turning to recent literature, Romberg says that in Germany arterio-sclerosis augments with rapidity after the fifteenth year. In 1477 necropsies performed at all ages and in all conditions he found the arteries diffusely thickened in two subjects at the ages of one and 14 years respectively, and in 5·8 per cent. of the subjects between the ages of 15 and 19 years. But not until the recent studies of the pathology of arterio-sclerosis by Ortner, Flexner, Thayer, and others have the frequency and importance of arterio-sclerosis in the young been appreciated. These writers have thrown light upon the relation between the acute infections and arterial disease. In 189 persons who had long recovered from enteric fever Thayer found that between the ages of 10 and 50 years 48 per cent. had palpable arteries, as compared with 17·5 per cent. in ordinary healthy individuals. Symnitzky in 138 necropsies on persons under the age of 25 years who died from various infections found sclerotic changes in the aortic wall in 38, or 27·5 per cent. Excluding subjects under the age of two years, in which these changes did not appear, they were found in 48 per cent. As to the etiology of the condition Professor Osler states: "That heredity plays a most important rôle is shown in the cases to which arterio-sclerosis sets in early in life in individuals in whom none of the recognised etiological factors can be found." Congenital syphilis is a well-recognised cause but its importance has been exaggerated by earlier writers who were not aware of the part played by acute infections. Hoffbauer, investigating nodular and diffuse arterio-sclerosis in the tuberculous, says that he "can find no pathological difference in the arterial wall between tuberculosis and nephritis" and that it will be necessary to give up the causal connexion between blood pressure and arterial thickening. Dr. Fremont-Smith has been able to collect from literature in all 146 cases of arterio-sclerosis in the young. These must represent but a small minority of the cases, for in few necropsies on children

has the arterial system been thoroughly examined. Lesions of the heart associated with acute infections have received much attention but the arteries have been overlooked. The latest investigation of the influence of acute infections on the arteries was published by Wiesel in July, 1906. It is based on 300 necropsies made at the Franz Josef Hospital, Vienna. Among them were 80 cases in which the beginnings of arterio-sclerosis were observed. The subjects were young, many of them infants. Macroscopic and microscopic observations were made of the condition of the central and peripheral vessels at the beginning and height of the fatal illnesses which included diphtheria, scarlet fever, measles, pneumonia, influenza, sepsis, pyæmia, osteomyelitis, suppurative otitis, enteric fever, cerebro-spinal fever, mushroom poisoning, and other conditions. Macroscopic changes appeared occasionally, usually between the sixth and tenth day as minute yellowish patches in the aorta, carotids, and coronaries. In a few cases minute projections of calcareous deposits were visible. Microscopic degenerative changes were almost constant not only in the large trunks but in the end arteries.

CARE OF THE FEEBLE-MINDED.

AN interesting paper by Miss Mary Dendy, the lady inspector of the special schools for the feeble-minded, was read recently before the members of the Manchester Statistical Society, on the Problem of the Feeble-minded. The point on which she insisted was that, unless the result of injury, weakness of intellect was incurable and would tend to be handed down to the offspring of the sufferer. Therefore it was "the most pressing of all the social problems of our time" and from its nature "it was the only one which justified them in overriding the responsibility of the parent for his child." Most of the vices claiming the attention of sociologists resulted from weakness of intellect—"infantile mortality, child neglect, underfeeding (or improper feeding), drink, unemployment, purposeless crime, assault, murder, and theft." This is a strong indictment but in the main it will not be disputed. It was responsible for a large proportion of the unemployed, for if after leaving the special schools they get work the best of them only keep it as long as they can be considered boys and are turned adrift when a man's wages have to be given. Miss Dendy said it was unfortunate that in this country this condition was considered a curable disease which could be set right by differential treatment. From this fallacy came statements as to children being returned to ordinary schools in a normal condition, the fact being that in some towns "many of the children admitted to the special schools were not really weak-minded." The facts put together by the Birmingham After-Care Committee showed that, short of permanent detention, the very best of the trained feeble-minded were employed only irregularly and that the great majority of them were unemployed or criminal. The teaching of useful habits of imitation was advocated in lieu of the habits of reason which served the ordinary mind. This line of argument leads up, of course, to the necessity of permanent detention and control, so that feeble-mindedness and its attendant evils shall not spread from more to more. "Residential or permanent schools should be provided and children should be admitted to them at an age to be determined in every case by the medical man in charge." The discussion that followed showed a general acquiescence in the opinions expressed in the paper but Dr. J. Niven suggested an important question, whether, supposing the whole of the evidently feeble-minded were removed and permanently taken care of, the fountain would be materially affected. "It not infrequently happened that only one child in a family was obviously defective and in those cases it followed that if such a one was removed others were left behind whose defects were not so noticeable." Still, allowing for the loophole which Dr. Niven discovered, it is certain that the multiplication of these unfortunates would be considerably checked, if not altogether prevented. There would always remain the danger, more or less in degree, that abuses might arise and that some might be shut out from their normal career by being kept in a permanent establishment of the feeble-minded. Careful inspection would have to be provided.

THE CREMATION SOCIETY OF ENGLAND.

AN extraordinary general meeting of the Cremation Society was held on March 23rd, Sir Charles A. Cameron, Bart., being in the chair, to consider the substitution of a new draft of rules for the existing rules of the society. Sir Charles Cameron gave in his speech an interesting epitome of the history of the society, speaking of the hostility which its foundation in 1874 aroused on every side, of the support afforded to it by the founder, the late Sir Henry Thompson, and also by the late Sir Spencer Wells and the ninth Duke of Bedford, whose joint generosity resulted in the erection and equipment of the crematorium at Woking in 1879. He narrated how it was six years before the judgment in the Welsh Druid case allowed of its employment and how the first cremation took place in March, 1885. In five years only 100 bodies were cremated in Great Britain, but the numbers steadily increased until in 1900 the office was performed 301 times at Woking. Last year 705 cremations took place in the 13 crematoriums throughout the kingdom. After reviewing the sanitary advantages and disputing the ethical drawbacks of cremation, Sir Charles Cameron went on to regret the fact that the practice had hitherto been limited to the upper and professional classes and pointed out that a cremation need cost the poor no more than they habitually spend on a decent funeral. He then proposed that the present single payment of 10 guineas, which constitutes a person a life member of the Cremation Society and entitles him to cremation without fee after his death, should be replaced by a single payment of 5 guineas or six annual payments of 1 guinea each, and further that the cremation should be paid for by the society at any crematorium in the kingdom. He hoped that when the number of cremations was such that the furnaces could be kept continuously heated, the fees would be reduced even more. Sir Charles Cameron's motion that these new rules should be substituted for the old was seconded by Sir Herbert Thompson, Bart., and carried unanimously by the meeting. Many of our readers will be glad to know of the society's progress and will wish it a still more rapid extension of its sphere of influence. It seems possible that the growth of city populations may ultimately necessitate general cremation as the solution of the problem of disposing of the dead. On sentimental grounds many will prefer for the means by which their bodies shall be resolved into their constituent elements a process the name of which, by a singular analogy with the Greek πῦρ, strongly suggests purification, to the more usual process which is uncompromisingly putrefaction, but, on the other hand, the biological aspect of the question must not be forgotten. Would the great elemental vegetable-animal cycle run risk of disturbance by the spoliation of the soil of a bulk of its wonted organised enrichment, or would the nitrifying bacteria rise equal to the occasion and derive compensatory toll from the atmosphere? It is a question that is not unworthy of consideration in respect of the expediency of cremation. Its social safety would seem to be assured by the regulations for death certification to which cremation has been made subject, but it must not be forgotten that the Druce *canard* could not have been so thoroughly falsified if

the Baker-street bazaar owner's body had been burnt instead of buried.

THE annual discussion at the Hunterian Society will be held at the London Institution, Finsbury-circus, E.C., on Wednesday, April 8th, at 8.30 P.M. The subject selected this year is "Rheumatism." Dr. Frederick Taylor will open the discussion, Dr. F. J. Poynton and Dr. T. J. Horder will speak on the bacteriological aspects of the subject, while Dr. A. P. Luff will deal with irregular manifestations of rheumatism and their treatment. All members of the medical profession are invited to attend.

THERE was a large attendance at the Hospital Conference which we announced recently would take place this week at University College, London. The motion by the Hon. Sydney Holland in approval of a system of part payment by hospital patients in a certain pecuniary position was adopted, as was Colonel Montefiore's motion in favour of the general appointment of trained almoners. On Wednesday evening the members of the Conference dined together at the Waldorf Hotel under the chairmanship of Mr. Cosmo Bonsor.

Sir Felix Semon, K.C.V.O., M.D., has been appointed to represent the British Government at the International Laryngo-Rhinological Congress to be held at Vienna on the 21st of this month and following days.

MOTORING NOTES.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

CORDINGLEY'S Thirteenth International Motor Car Exhibition was held last week at the Agricultural Hall, London. I must say that this show always attracted me, chiefly, I suppose, because at the exhibition some ten years ago my thoughts were first directed to automobilism, and since buying a car after the 1899 show I have used no other means of conveyance. This is the time of the year when those about to embark in and on a car begin to think of taking the plunge, and though many good makes were conspicuous by their absence there were some well worthy of consideration by the medical man in search of a car.

The Star Cycle Co., Limited, of Wolverhampton, had on Stand Nos. 111 and 112 specimens of their Royal and Imperial Starling Cars, all excellent machines for a medical man. The Imperial Starling has a single cylinder 8-h.p. engine, governed by variable inlet valves, the crank being of the built-up type with internal fly-wheels. The clutch is of the leather-faced cone type and of good dimensions, and with care should be neither too fierce nor, if kept properly adjusted, likely to slip. A gate change is fitted and three speeds forward and a reverse, the motion shafts running on ball bearings. The transmission is by cardan shaft to the now popular live axle. Two internal expanding brakes are fitted on the road wheels and a powerful foot brake works on the gear box shaft. A fan keeps the radiators cool and the water is circulated by a centrifugal pump driven by friction off the fly-wheel. This form of pump is similar to the one used on the old 7-h.p. Panard and I understand answers well, though personally I must say I prefer a gear driven pump. Ignition is by high tension coil and accumulators and the commutator is in an accessible position; magneto can, I understand, also be arranged for and for a medical man the double ignition is an advantage. The car is light, which means small tyre bills, and as a two-seater with a cape cart hood and a mica wind shield seems an ideal car for a professional man, the only alterations that I would suggest are a gear driven pump and extra high tension magneto ignition and, of course, the Stepney spare wheel—it is an advantage not to be delayed by a puncture. The Royal Starling is much the same, but has a two-cylinder engine of 10 h.p. and can be turned out with either a two- or four-seated body; the one shown with a four-seated body appealed to me as it was not too large for ordinary work and was also roomy enough for a tour with a couple of friends and baggage. Another advantage of these cars is that they are very simple and so in every way suitable for the owner who does not desire to employ a regular chauffeur.

Those in search of a larger and more powerful machine will perhaps fancy that shown by the Union Motor Car Company of Denbigh-street, London, who on Stand No. 89 had a fine specimen of Italian work in a 20-h.p. chassis, manufactured by the Societa Meccanica Bresciana, of Milan, which had four cylinders, variable lift to valves, Eiseman high tension magneto, automatic carburettor, single metal to metal clutch, positive lubrication by pump, four speeds and reverse with direct drive on top speed, gate control and cardan shaft transmission, with two universal joints. The metal expanding brakes have a neat compensating device, a differential gear in miniature making it impossible to apply the back brakes unequally. The makers seem to have a good opinion of their work, as a six years' guarantee is given against faulty material or workmanship. I do not know of any other manufacturer giving one covering such a long period.

The Reo Motors, Limited, of Broad Sanctuary, London, had on Stands Nos. 62 to 67 a fine collection of their cars ranging from 10 to 22 h.p. Their 10-h.p. single cylinder has a horizontal engine 4¾ by 6 inches, with transmission by a planetary gear giving two speeds forward and reverse, the drive being by single chain. Cooling is by a positive gear pump and the ignition is by accumulator and high tension coil, and at the price, £125 it certainly is worthy of consideration. It is true that horizontal engines are not fashionable, but the old Wolseleys had such engines and they did excellent work, and the fact that vertical engines are now so much in demand does not mean that they are the best.

An excellent four cylinder car is the Empress, exhibited on Stand No. 117 by the Empress Motor Company of Manchester. The cylinders are cast in pairs and the valves work in cast iron guides, while the pistons are of steel, which seems certainly a step in the right direction. Ignition is by low tension magneto in conjunction with a coil, so with an accumulator a double ignition is provided, which for a medical man is certainly an advantage. The clutch is of the internal type, faced with leather, and being mounted on the crank shaft is bound to remain always in alignment with the fly-wheel. The carburettor is the invention of the designer of the car and is so constructed that the motor is supplied with a constant mixture of petrol and air, irrespective of the speed of the motor, thus insuring great engine flexibility. Another low-priced four cylinder car well worthy of inspection is the F. N., shown by the F. N. Agency, of Great Portland-street, London. This is a Belgian car, built at Herstal, near Liège. The valves are all located on one side and operated off a single cam shaft; the crank, which runs in three long bearings, is slightly desaxe, cooling is by a centrifugal pump, and a fan is fitted behind the radiators. Lubrication is by positively driven pump. The clutch is of the friction-cone type and the male cone can be easily removed; it is connected by a flexible coupling to the change-speed gear, so the alignment of these parts is not affected by any movement or twisting of the frame. The transmission to the back axle is by a cardan shaft, having a universal joint at each end, and the joints are well protected from mud and dust. Ignition is by a high-tension magneto and the distributor is easily accessible, which is a great advantage.

Messrs. R. Reynold Jackson and Co., of Notting Hill-gate, London, had some light cars on view, of which the dog-cart and four-seated phaeton were most suitable for medical work. I understand that they will shortly introduce a special car for medical men with a De Dion engine. A body that was most beautifully upholstered was the "Sedan Chair," shown by the Metropolitan Garage Association of 12A, Palace-street, Westminster, London. The levers were all brought inside the carriage and the driver is absolutely protected, and if painted in a colour less easily soiled I cannot imagine a more comfortable or more suitable body.

A most useful device for motorists having a driver is the Donisthorpe Petrol Meter. It tells whether the driver is careful or wasteful with petrol, whether the car has been used for unauthorised trips, and whether the engine is working economically or not. It indicates precisely how much petrol is put into the tank, how much is used each mile of the journey, and how much remains at the journey's end. This meter, which is made by the Donisthorpe Patents Co. of 5, Southampton-street, Strand, London, can be quickly fitted and certainly is an advantage to owners who employ

chauffeurs and whose cars are kept away from their residence. The assurance that none of the petrol one pays for is wasted will surely recompense for the cost of this accessory.

Another useful article for the man who drives and looks after his own car is the "Pushon" instantaneous pump connexions which do away with all adapters and twisting swivel joints and when pushed over any make of tyre valve instantly and automatically form an air-tight joint. From past experience I know the trouble which ordinary pump connexions are so I can welcome and recommend the "Pushon."

The airship section in the gallery contained a model of Mr. Henry Farman's aeroplane and a Spencer airship, but I fear it is premature to consider the purchase of one of these for medical work, though in years to come they may be as popular with the profession as cars are now!

THE "FASTING CURE" IN WANGANUI NEW ZEALAND.

WE have received from Dr. Robert H. Bakewell (Surgeon-Captain, Army Medical Department) an interesting series of papers which he has published in a New Zealand journal, supplemented by a short report which he has prepared for us on the proceedings of a small sect of "health cranks" who arose during last year in Wanganui, New Zealand, and have excited considerable interest in that colony. The cardinal principle of their strange doctrine is that mankind owes the ills of its flesh to eating, and they propose as a universal panacea the abstention from food for periods of two or three weeks at a stretch, the victim going about his daily work during the term of his self-inflicted fast. Dr. Bakewell devotes some columns to the origin of this "treatment," and of this we need say little more than that it is American and sprang from the brain of a Dr. Dewey of the University of Michigan in the form of a book which he called "The True Science of Living." One extract from the book will suffice: "When death occurs"—i.e., under the system—"before the skeleton condition is reached, it is always due to old age or some form of disease or injury and not to starvation." If this wild scheme had not gone beyond print we should hardly have noticed it but it is interesting to record that it has reached New Zealand and has been ardently adopted by a band of zealots in Wanganui. Dr. Bakewell's attention was called to these people by the personal narrative of one of them, in which he gave a subjective account of a 25 days' fast, which was widely published in New Zealand. Our correspondent was exceedingly sceptical of the story and last December he proceeded to the new faddists' Mecca to assure himself of its truth or falsehood. He found evidence which he considers convincing that eight people had voluntarily undergone fasts of a fortnight and longer, one of whom, a Maori chief, had died, as it was said, from "blood poisoning" shortly afterwards. The remainder of the people were white men, six of whom Dr. Bakewell saw, although they were not actually fasting at the time. He writes: "After hearing all the evidence, after minutely examining and cross-examining them, I found it so difficult to believe that these six persons, all occupying the respect of their fellow townsmen, could without any conceivable object enter into a conspiracy to utter such improbable lies that I found it easier to believe in the fasts themselves." With regard to the examination of them it may be said in a word that though the fasters thought they were the better for their performance Dr. Bakewell says he would not have passed one of them for insurance as a first-class life, and he noted particularly a dangerous heart weakness. They acknowledged losing weight at the rate of about a pound a day during the fast. The men all stated that the mouth and tongue became covered with a thick fur and that the breath was very offensive; further, that the sexual instinct was entirely absent during the fast. One man stated that after 35 days during which the bowels never acted he passed one most offensive evacuation, and at the same time, or on the same day, vomited most offensive matter. Some of them endured tortures of headache and depression during a few days but subsequently regained their comfort. They took water only, with the exception of lemon juice; one man confessed to an occasional "nip of milk in soda-water."

Dr. Bakewell subsequently had an opportunity of observing one of the devotees in the course of his "cure" and has prepared the following note about his condition:—

It will be observed that in no case was I able to see a person actually fasting at Wanganui. But since then I was visited at my residence near Auckland by a former patient and old acquaintance, not as a patient but simply because he knew I was interested in the subject. On his first visit he told me that he had been absolutely fasting, except from water, for four days. The first day he took no water even, but this was followed by acute pain in the lumbar region and the passage of a large quantity of uric acid and urates. This was relieved by drinking copiously of water. I had known my visitor for at least 20 years. He had always the appearance of a florid complexioned, rather over-stout man. Latterly he has very greatly diminished in bulk. On my first glance at him I was struck with the grey earthy pallor of his face, destitute of every vestige of healthy colour. He was bathed in a cold sweat, which literally poured from him; his wrists were wet; his pulse was 60, with intermissions of very long duration every 15 beats. He expressed himself as being, with the exception of slight lumbar pain, "perfectly well," although the exertion of walking from the electric tram station to my house—a distance, which I measured myself after he had gone, of only 237 paces all down hill—had plunged him into this cold sweat. He came again two days afterwards, having continued the fast against my strong advice. His pulse was feebler and intermissions took place after every third or fourth beat. I urged him to take some food, but he refused, stating, however, that he intended to break his fast when he returned home. His face was even a darker earth-tint than on the previous visit. I obtained a drop of blood, which I examined immediately under an $\frac{1}{8}$ in. power. The red corpuscles were abundant, but much smaller than normal. After a most careful search for half an hour I failed to find even a single leucocyte. Mr. —— not having visited me again, I have been unable to make any further examination of his blood.

Dr. Bakewell incloses extracts from American literature claiming something like the rejuvenation of a man as the result of a 45 days' fast, but he gives strong reason for doubting the accuracy of the story. He has, we think, established the *bona fides* of these Wanganui fanatics. The most interesting thing is that they were able to go about their work during their prolonged abstinence from food and in only one case was hunger a prominent symptom. His conclusion is that "there is some psychic force of which we know nothing, or little, at work which sustains them." At any rate the "fasting cure" of these New Zealanders is not without interest to the physiologist.

MEDICINE AND THE LAW.

A Prescribing Druggist and a Death from Opium Poisoning.

AN inquest held recently by Mr. Luxmore Drew at Hammersmith showed the following facts. A plasterer, Richard Smith, working at the building connected with the coming Anglo-French Exhibition, complained of diarrhœa and was given a dose of a mixture kept for the purpose by the St. John Ambulance Corps at the works. This occurred on March 11th and Smith did not resume work but remained at home, still suffering from diarrhœa and without medical attendance until March 14th, when his wife asked a druggist, James Thomson, of 161, Goldhawk-road, for "two pennyworth of composition powder" for him. In the course of the discussion which followed the druggist appears, from her evidence at the inquest, to have told her that what she asked for would not be of any use as her husband had been ill for so long, and she then asked him to "make her up something." He accordingly gave her a bottle of what she spoke of as diarrhœa mixture, labelled with directions to the effect that one-eighth part of its contents was to be taken every hour until the diarrhœa ceased. The word "poison" did not appear on the label, nor was there any warning that the dose named should not be exceeded. The mixture, according to the evidence of the druggist, contained with other ingredients 80 minims of tincture of opium. Smith, on his wife's return, not only took a dose but finding that it made him feel more comfortable took two more within an hour of the first. This was apparently in the evening and by the next morning he had emptied the bottle. During that day he was very drowsy and in the evening a medical man, Mr. C L Batteson, was summoned. According to his evidence he did not find the patient drowsy but was given a history of diarrhœa, mention being made of a bottle of medicine from a druggist, as to which he did not press any inquiry but concluded that the man was suffering from a chill and prescribed chalk and opium to be taken in doses each of which would contain about two minims of opium. On the following day Mr. J. Batteson saw the patient and stopped the medicine ordered by his son Mr. C. L. Batteson, giving a prescription containing strychnine. According to his evidence he found that the diarrhœa had stopped and considered that the

drowsiness and contraction of the pupils which he observed were due to the opium in his son's medicine. On the following morning Mr. F. H. Fawcett was called in. According to his evidence he found the patient comatose, with pin-point pupils, a temperature of 96° F., and stertorous breathing. He found traces of albumin in the urine but did not consider that there were indications of the kidneys being affected sufficiently to account for the state in which the man then was or to account for his death which took place that night. Dr. G. C. Low, pathologist at the West London Hospital, who had held a post-mortem examination by order of the coroner, gave evidence that he had found no disease except that the heart was flabby with thin walls; the lungs had spots of tubercle, and the substance of the kidneys was slightly fatty but there was no Bright's disease. He was of opinion that the diarrhœa was not of a typhoid but of a tuberculous nature, and that there was no disease to account for the death which, he had no doubt, was due to opium poisoning. After a prolonged inquiry the jury found a verdict of "Opium poisoning due to misadventure," adding a rider by which they requested the coroner "to caution severely the druggist against prescribing medicine indiscriminately and especially for giving poison without caution." The druggist had given evidence after being informed by the coroner that in the circumstances he need not do so. He took up the position that he did not transgress the law in handing to the woman a medicine for diarrhœa when she asked for one but that he would have done wrong if he had examined the patient or had joined in a consultation with regard to him, and he considered that what he had done did not amount to making a diagnosis. With regard to the question of selling a poison without so describing it on the label, he relied on the exemption in the Pharmacy Act, 1868, Section 17, applying to poisons forming part of "ingredients dispensed by a person registered" under the Act. It was then pointed out to him that even if this application of the term "dispensing" were correct, the exemption only applied when medicine was dispensed under conditions which included the entry of the ingredients in a book with the name of the person to whom it was sold, and he admitted that he had made no such entry. For this omission he had no explanation except that it was an error. Discussion took place with regard to the terms of the Apothecaries Act and the Pharmacy Act so far as they might apply to conduct such as that admitted by Mr. Thomson, and it was shown that they were not susceptible of easy interpretation. The coroner, in summing up to the jury, laid stress upon the gravity of the position in which Mr. Thomson had placed himself by what he had done. He was not, however, of the opinion that his conduct amounted to criminal negligence such as would involve the charge of manslaughter, but rather to recklessness to be met by such censure as the jury afterwards found to be due. It will be enough to add that in the interests of the public, of the medical profession, and of the druggists the position of the last named should be more strictly defined, and that their responsibility in attempting to treat disease should be made so clear that any approach to doing so would be avoided by them.

LYNN THOMAS AND SKYRME FUND.

THE following subscriptions should have been included in the first list of contributions to this fund which was published in THE LANCET last week:—

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C. R. Graham, Wigan.
G. J. W. Pinching, Gravesend.
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H. Egerton Williams, Newport, Mon.

A second list of subscriptions has now been sent to us by Mr. William Sheen and includes support which he has received between March 21st and 28th:—

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B. Jex Blake, Hereford.
H. Lea's, Winsford, Cheshire.

Erratum.—The name of J. B. Footner, Tunbridge Wells, was wrongly included among those of subscribers of one guinea last week. It should have been inserted in the two-guinea section of subscriptions.

Looking Back.

FROM

THE LANCET, *SATURDAY*, April 3rd, 1830.

ACTION OF ASPARAGUS[1] ON THE CIRCULATION.—Digitalis and prussic acid possess the property of weakening the action of the heart, but the employment of these medicines is frequently prevented by the gastric irritation they produce. M. Broussais proposes, as a substitute for these remedies, asparagus, which is perfectly inoffensive to the stomach, and acts as a sedative upon the heart. If a patient, who is suffering from hypertrophy and excessive action of the heart, eat asparagus, M. Broussais assures us he will find relief; and if the remedy be discontinued, the habitual symptoms will return. Syrup of the green ends of asparagus, like the plant itself, has the power of diminishing the action of the heart, without annoying the stomach. A man, having hypertrophy of the heart, perceived a very decided alleviation of his sufferings while he was in the habit of eating asparagus, and he consequently prepared a syrup of the plant for use when it was out of season. A physician whom M. Broussais does not name, but to whom he is indebted for this discovery, collected many cases in support of this statement; and the Professor of Val-de Grâce declares that it is confirmed by the result of his own experience.—*Ann. de la Méd. Phys.*

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8583 births and 5405 deaths were registered during the week ending March 28th. The mean annual rate of mortality in these towns, which had been equal to 17·6, 17·2, and 16·9 per 1000 in the three preceding weeks, rose again to 17·4 in the week under notice. During the 13 weeks of the past quarter the annual death-rate in these towns averaged 18·0 per 1000; the mean rate in London during the same period did not exceed 17·6. The lowest annual death-rates in the 76 towns last week were 9·5 in East Ham, 9·6

[1] It may be interesting in conjunction with the above to recall an annotation entitled "Is Asparagus Wholesome?" which appeared in THE LANCET of May 19th, 1906, p. 1405.

in Hornsey, 10·3 in Tottenham, and 10·8 in Leyton; the rates in the other towns ranged upwards to 24·3 in Devonport and in Rhondda, 24·7 in Middlesbrough, 25·0 in Merthyr Tydfil, and 25·6 in Oldham. The rate of mortality in London last week did not exceed 17·2 per 1000. The 5405 deaths in the 76 towns last week showed an increase of 148 upon the number returned in the previous week, and included 486 which were referred to the principal epidemic diseases, against 400 and 410 in the two preceding weeks; of these, 203 resulted from whooping-cough, 141 from measles, 52 from diphtheria, 38 from diarrhœa, 36 from scarlet fever, and 16 from "fever" (principally enteric), but not one from small-pox. The deaths from these epidemic diseases in the 76 towns were equal to an annual rate of 1·6 per 1000, against 1·3 in each of the three preceding weeks; the rate from the same diseases in London was equal to 1·7. No death from any of these epidemic diseases was registered last week in Tottenham, York, Ipswich, King's Norton, or in three other smaller towns; the annual death-rates from these diseases ranged upwards, however, to 4·0 in Sunderland, 4·3 in Croydon, 5·2 in Salford, and 6·1 in Merthyr Tydfil. The fatal cases of whooping-cough in the 76 towns, which had been 134 and 152 in the two previous weeks, further rose to 203 in the week under notice; the highest death-rates from this disease last week in these towns were 2·0 in Sheffield and in Rhondda, 2·5 in Aston Manor, 3·3 in Sunderland, and 3·4 in Merthyr Tydfil. The 141 deaths from measles also showed a considerable increase upon recent weekly numbers, and caused death-rates equal to 2·0 in Burnley, 2·4 in Salford, 2·6 in Croydon, 2·7 in Preston, and 2·9 in Stockton-on-Tees. The deaths referred to diphtheria declined again, however, to 52 from 58 and 62 in the two preceding weeks; this disease, however, caused death-rates of 1·1 in Hornsey and 1·4 in Merthyr Tydfil. The 38 deaths attributed to diarrhœa corresponded with the number in the previous week. The 36 fatal cases of scarlet fever showed an increase of six upon those in the previous week, and included 15 in London, four in Liverpool, three in Manchester and Salford, and two in Newport (Mon). The 16 deaths referred to "fever" corresponded with the low number in the previous week; two were returned in London, in Nottingham, and in Salford. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever Hospitals, which had steadily declined in the 16 preceding weeks from 5581 to 3356, had further fallen to 3229 on March 28th; 355 new cases were admitted to these hospitals during the week under notice, against 312 and 378 in the two preceding weeks. A case of small-pox (the first for many months) was admitted to the Metropolitan Asylums Hospitals during last week. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 317 and 320 in the two previous weeks, further rose to 340 during the week under notice, and exceeded by 18 the corrected average number in the corresponding week of the five years 1903–07. The deaths directly referred to influenza in London, which had declined from 141 to 68 in the four preceding weeks, rose again to 71 in the week under notice. The causes of only 34, or 0·6 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were again duly certified last week in Leeds, Bristol, Bradford, Newcastle-on-Tyne, and also in 54 other smaller towns; five uncertified causes of deaths were, however, registered last week in Birmingham, four in Leicester, and three each in Liverpool, Sheffield, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 20·3 and 18·5 per 1000 in the two preceding weeks, rose again to 19·4 in the week ending March 28th, and exceeded by 2·0 the mean rate during the same week in the 76 large English towns. Among the eight Scotch towns the death-rates last week ranged from 12·6 and 13·8 in Aberdeen and Greenock, to 21·7 in Glasgow and 26·9 in Dundee. The 683 deaths in these eight towns showed an increase of 31 upon the number returned in the previous week, and included 114 which were referred to the principal epidemic diseases, against 97 and 84 in the two preceding weeks; of these, 58 resulted from measles, 22 from whooping-cough, 21 from diarrhœa, seven from "fever," three from diphtheria, two from scarlet fever, and one from small-pox. These 114 deaths were equal to an annual rate of 3·2 per 1000, which was just double the mean rate last week from the same diseases in the 76 English towns. The fatal cases of measles in the eight Scotch towns, which had been 47, 46, and 37 in the three preceding weeks, rose again last week to 58, and included 45 in Glasgow, six in Aberdeen, and four in Edinburgh. The 22 deaths from whooping-cough, however, were fewer by two than the number in the previous week; 13 occurred in Glasgow, four in Edinburgh, and two in Greenock. Of the 21 deaths attributed to diarrhœa, an increase of eight upon the number in the previous week, 12 were returned in Glasgow, and three in Dundee. The seven deaths referred to "fever," of which six were certified as cerebro-spinal meningitis and one as enteric, exceeded the low number in the previous week by four, and included four in Glasgow. Two of the three deaths from diphtheria last week were returned in Dundee, and the fatal case of small-pox was registered in Leith. The deaths referred to diseases of the respiratory organs in these eight towns, which had been 142 and 158 in the two preceding weeks, declined to 133 in the week under notice, but exceeded by nine the number returned in the corresponding week of last year. The causes of 19, or 2·8 per cent., of the deaths in these eight towns last week were not certified; in the 76 English towns the proportion of uncertified causes of death in the same week did not exceed 0·6 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 24·8 and 23·9 per 1000 in the two preceding weeks, rose again to 27·4 in the week ending March 28th. During the 13 weeks of last quarter the death-rate in the city averaged 25·5 per 1000, the mean rates during the same period being only 17·6 in London and 18·3 in Edinburgh. The 207 deaths of Dublin residents registered in the week under notice showed an increase of 26 upon the number returned in the previous week, and included but four which were referred to the principal epidemic diseases, corresponding with the low number returned in each of the two preceding weeks; these four deaths included three from whooping-cough and one from diarrhœa, whereas no death resulted from measles, scarlet fever, diphtheria, "fever," or small-pox. These four deaths from epidemic diseases were equal to an annual rate of but 0·5 per 1000, the death-rate last week from these principal epidemic diseases being equal to 1·7 in London and to 1·5 in Edinburgh. The fatal cases of whooping-cough in Dublin last week exceeded the numbers in recent weeks. The 207 deaths from all causes in the city last week included 29 of infants under one year of age and 68 of persons aged upwards of 60 years; the deaths of elderly persons showed a further increase upon recent weekly numbers. Three inquest cases and two deaths from violence were registered, and 77, or 37·2 per cent., of the deaths occurred in public institutions. The causes of ten, or 4·8 per cent., of the deaths registered during the week under notice were not certified; in London all but two of the 1581 causes of death were duly certified, and in Edinburgh the proportion of uncertified deaths was equal to 5·6 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: E. C. Cridland to the *Minotaur* on commissioning; and J. D. Hughes to the *Egmont* and for Malta Dockyard. Staff Surgeons: H. H. Gill to the *Terror*, additional; W. H. O. Garde to the *Emerald*; and J. A. L. Campbell to the *Donegal*. Surgeons: A. R. Davidson to the *Actæon*; and T. F. O'Keeffe to the *Minotaur* on commissioning.

ROYAL ARMY MEDICAL CORPS.

Captain A. F. Carlyon has been appointed for duty in the London District. Captain F. J. Turner has been transferred to Jubbulpore for duty.

IMPERIAL YEOMANRY.

Lincolnshire: Surgeon-Major Thomas H. Openshaw, C.M.G., to be Surgeon-Lieutenant-Colonel (dated Feb. 22nd, 1908.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 2nd Hampshire: Percy James Sandys Bird (late Surgeon-Captain, 1st West Riding of Yorkshire Royal Garrison Artillery (Volunteers)), to be Second Lieutenant (dated Feb. 1st, 1908). 1st Northumberland: Surgeon-Captain (Honorary Captain in the Army) John Wreford to be Surgeon-Major (dated Jan. 21st, 1908).

Rifle: 3rd Volunteer Battalion, The Northumberland Fusiliers: Surgeon-Lieutenant Herbert M. Jamieson resigns his commission (dated Feb. 29th, 1908). 5th (Irish) Volunteer Battalion, The King's (Liverpool Regiment): Surgeon-Captain John J. O'Hagan to be Surgeon-Major (dated Feb. 25th, 1908). 1st Volunteer Battalion, The Hampshire Regiment: Surgeon-Lieutenant Herbert J. Godwin to be Surgeon-Captain, remaining supernumerary (dated Feb. 22nd, 1908). 2nd Volunteer Battalion, The Hampshire Regiment: Surgeon-Lieutenant Robert E. Lauder to be Surgeon-Captain (dated Feb. 7th, 1908). 3rd Volunteer Battalion, The Essex Regiment: Surgeon-Captain Francis J. Warwick to be Surgeon-Major (dated Feb. 26th, 1908). 3rd Volunteer Battalion, The Queen's Own (Royal West Kent Regiment): Surgeon-Captain Lewis T. F. Bryett to be Surgeon-Major (dated Jan. 21st, 1908).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Liverpool Bearer Company: Captain Samuel H. House resigns his commission (dated March 31st, 1908).

DEATHS IN THE SERVICES.

At Wellington, Somerset, on March 24th, Colonel Joseph Henry Moore, R.A.M.C. (retired), in his sixty-fourth year. The deceased had been for 30 years in the service. He was in the Ashanti War, 1873–74, being at the defence of the hospital at Foomana (medal and clasp). In the Afghan War, 1878–79, Colonel Moore was present at the occupation of Candahar, the battle of Khalet, the Ghilzan actions, and also at Ahmed Khel and Urzoo (mentioned in despatches, medal, and clasp). Subsequently Colonel Moore served in India and was principal medical officer both at Quetta and Bombay.

Surgeon-Major-General Thomas William Fox, A.M.S., on March 28th at his residence at Rochester. He joined the service as assistant surgeon in 1852, became surgeon in 1860, surgeon-major in 1872, deputy surgeon-general in 1880, and surgeon-major-general in 1887. He retired in the following year. He served with the 14th Light Dragoons in the Persian campaign of 1857 and was present at the bombardment of Mohumvah (medal with clasp).

OUTBREAK OF DIPHTHERIA ON H.M.S. "IMPREGNABLE."

It has just been officially notified that owing to the number of cases of diphtheria on board the *Impregnable* (the boys' training establishment at Devonport) the ship has been placed under sanitary regulations. For some time there have been an unusual number of cases of illness and over 100 boys have been removed to the Royal Naval Hospital, Stonehouse, including 24 suffering from diphtheria. There are now about 700 boys and instructors on board.

RECRUITS AND BAD TEETH.

At a meeting of the Royal Dental Hospital held on March 26th the Hon. W. F. D. Smith, M.P., who presided, called attention to the large number of recruits for the army who were rejected owing to their teeth being too bad to eat army food.

Colonel Valentine Matthews, late commanding London Companies Royal Army Medical Corps (Volunteers), has been appointed an honorary officer (1er Jefe Honorario) of Ambulancia No. 3 (Madrid), Spanish Red Cross.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC.—The annual general meeting of the Medical Graduates' College and Polyclinic was held at 22, Chenies-street, London, on March 27th, Dr. C. Theodore Williams being in the chair. The annual report, which was duly adopted, gave an interesting account of the success and the progress of the institution, the total number of attendances of medical men at the lectures and cliniques making a grand total of 13,862. The courses of instruction in opsonins and vaccine therapy had attracted a great many practitioners, and the clinical investigations conducted by Captain A. E. H. Pinch, I.M.S. (retired), the medical superintendent, had proved as profitable as they were successful.

Correspondence.

"Audi alteram partem."

"AUDI ALTERAM PARTEM."

To the Editor of THE LANCET.

SIR,—Many members of our profession have noticed with regret a statement that Mr. Edge, a judge in the Clerkenwell county court, has seen fit to criticise in very forcible language the conduct of a much respected medical practitioner. In the case of Cropper *v.* Stokes it was asserted by the plaintiff that Dr. Henry Fraser Stokes of Highbury had agreed to attend a patient at Horsham, that he stated his fee to be 5 guineas per visit, that he agreed to reduce this fee to 3 guineas (the charge per visit made for a previous attendance at Oxted, a much nearer point), that he subsequently demanded a cheque in payment on the 5-guinea basis, promising to refund £17, which would practically restore the 3-guinea scale, and that he did not make restitution as promised. Medical men will at once recognise that such an arrangement as this would be unique in the annals of practice and that improbability—nay, impossibility—is stamped on the face of it. Its existence was absolutely denied by the defendant. On the side of the plaintiff there were three witnesses. Dr. Stokes himself gave evidence for the defence. The judge appears to have had no difficulty in believing the stronger seeming side, and incidentally he is reported to have accused Dr. Stokes of perjury and that in terms which were not distinguished by moderation. To those who know Dr. Stokes its mere association with him is incredible. Mr. Edge is said to have based his decision and his strictures on the facts that the plaintiff was supported by several sworn witnesses and that these were corroborated by correspondence.

Under all the circumstances, Sir, I feel sure that your readers will be interested in hearing the other side of this singular case. In the first place, the "correspondence" referred to, which seems to have brought such weighty consequences in its train, was on one side only, like the bulk of the evidence—namely, on that of the plaintiff. No letter came from Dr. Stokes. Further, the assertion that fees once fixed at 5 guineas had been reduced to 3 guineas is without foundation. There is, indeed, no reason for such a reduction but every reason to the contrary.

Horsham is 39 miles from London, Oxted but 20, and the assumption that both places could be set on an equality of remuneration will commend itself to no sane man acquainted with medical procedure. Finally, the alleged engagement to receive a cheque and to refund a portion of it is, as every practitioner would suppose, entirely imaginary. It may have arisen, as has been suggested, by what process of logic I cannot conjecture, from a statement by Dr. Stokes that in the event of poverty on the plaintiff's part being shown he might consider some reduction of the amount due to him; in fact, from the sort of optional and provisional concession which medical men are making every day and which in future they are likely to make with greater caution than hitherto, if at all.

Such is the case and such the conditions of judgment which have given rise to the most emphatic reprobation of a universally respected and estimable practitioner engaged in simply maintaining his right to adequate remuneration. With Mr. Edge's position as a judge in dealing with a numerical balance of evidence or in sifting its purity I do not concern myself but certain points about this case must, I think, stand out in relief. These are the mainly one-sided character of the evidence, the imputation of perjury without any demonstrated proof, the violence of denunciation which attended this, and, lastly, the harshness which denied an appeal against a judgment with these aggressive accompaniments. It is possible that on reflection Mr. Edge himself regrets the freedom of his remarks and, if so, he cannot as a gentleman do less than state the fact. As for Dr. Stokes, he may rest assured that whatever the temporary discomfort of his present position he cannot forfeit the esteem of his medical brethren.

I am, Sir, yours faithfully,

Green-lanes, N., March 31st, 1908. B. G. MORISON.

TUBERCULOSIS AND THE MILK-SUPPLY.

To the Editor of THE LANCET.

SIR,—A conference was held at the Town Hall, Manchester, on Feb. 28th, of delegates representing the public health committees of the cities of Liverpool, Manchester, Birmingham, Leeds, and Sheffield in regard to the danger to man of milk containing the living infection of tuberculosis. Each of the above cities has had by reason of local Acts of Parliament considerable experience in the examination of samples of dairy milks for this infection. The result of this experience may be briefly stated by saying "*that the milk in about 10 per cent. of the churns sent into these towns contains the living infection of tuberculosis.*" From experience elsewhere it is almost certain that this high proportion is exceeded in many districts.

The report of the Royal Commission on Tuberculosis issued in January, 1907, states that "there can be no doubt that in a certain number of cases the tuberculosis occurring in the human subject, especially in children, is the direct result of the introduction into the human body of the bacillus of bovine tuberculosis; and there can also be no doubt that in the majority at least of these cases the bacillus is introduced through cows' milk. Cows' milk containing bovine tubercle bacilli is clearly a cause of tuberculosis and of fatal tuberculosis in man."

With this important statement, and the knowledge that in their own towns the amount of infected milk was large, the conference decided to approach the Government with a view to getting effective steps taken to eradicate bovine tuberculosis. The conference felt much strengthened in urging adequate preventive measures by the knowledge that any steps which will effectively deal with the tubercle-infected milk will at the same time benefit all consumers of milk in the direction of insuring a cleaner supply. And again, they feel that the direct benefit to farmers and butchers in preventing loss due either to the reduced value of the stock or to the seizure of tubercular meat intended for human food will be an important one. The conference passed the following resolution:—

That having regard to the experience of the five towns whose delegates have conferred on this subject, and also to the return recently made to the House of Commons at the request of Dr. Rutherford, a representation be made to the Presidents of the Local Government Board and the Board of Agriculture and Fisheries with a view to inducing these Boards to take effective steps to enforce uniformly throughout the country proper and suitable inspection of dairies and cowsheds, and for regulating the construction of such dairies and cowsheds so as to insure cleanliness and suitable hygienic conditions; and further, that the Government be respectfully asked to include in their prospective legislation dealing with milk, clauses calculated to bring about the eradication of tuberculosis from bovines within a measurable period of years.

It is intended to present this resolution to both the Local Government Board and the Board of Agriculture.

I am, Sir, yours faithfully,

THOMAS FLETCHER,
Chairman of the Conference and Chairman of the Health Committee of the Corporation of Birmingham.

The Council House, Birmingham, March 21st, 1908.

CALMETTE'S TUBERCULIN TEST IN 210 ASYLUM PATIENTS.

To the Editor of THE LANCET.

SIR,—I have recently applied the Calmette test to 210 patients in this asylum. After reading the many papers on the subject I took the reliability of the test for granted and undertook its application with a view to ascertaining the proportion of tubercular cases here, influenced as I was by the proposed building of a verandah for such patients and the question of the necessary amount of accommodation to be provided. In performing the test I left out every patient where struggles or excitement was likely to interfere with the proper application of the tuberculin to the eye. I selected only those whose eyes were healthy. The 210 patients constituted 80 per cent. of the total paupers resident. At the time there was only one case of active phthisis. This girl, tested with a solution of 1 in 150, gave the reaction in three hours. There were also four cases where the patients had during the past two years suffered from active pulmonary tuberculosis, but all were in a quiescent state and in good condition after prolonged open-air treatment. All four reacted to a 1 in 150 solution. Of the others 91 patients gave a positive reaction. Many of these were undoubtedly of poor nutrition but none of them as yet have furnished any other proofs of tubercle.

One hundred cases were tested with the 1 in 150 solution, the remaining 110 with solutions varying in strength from 1 in 300 to 1 in 700. Taken in batches of 25 for each particular solution it was found that there was a slightly reduced proportion of positive reactions as the solution was weakened. In the batch tested with 1 in 700 there were six positive reactions; two of these in very healthy persons were the most violent reactions of all the cases. If the test be reliable it cannot anywhere be of such service as in an asylum where the symptoms of tubercle like those of other diseases are often more obscure than usual and where early separation of the affected cases is so desirable. This asylum has had for years the reputation of being singularly free from tubercle, though in the past year the death-rate from phthisis has gone up, but a proportion of nearly 50 per cent. of positive reactions to the Calmette test suggests either a serious condition of affairs here or a want of reliability in the test. It would be rash in view of other experiments performed by specialists to accept the latter theory and so it seems to me that it is not verandahs or sanatoria for consumptive patients alone that we so much need as a general extension of the system of open-air treatment of all the insane.

I am, Sir, yours faithfully,

JAMES P. STURROCK, M.A. St. And., M.D. Edin.
Midlothian and Peebles Asylum.

A DIAGNOSTIC SIGN OF INFLUENZA.

To the Editor of THE LANCET.

SIR,—Since the reappearance of influenza in 1889 I have attended many thousands of cases and for several years have noticed that in every case there is present a swelling or œdema of the uvula. This swelling gives the uvula a pale, waxy, œdematous appearance. It is found at the commencement of the attack and usually lasts for several days. It is often present before there is any rise of temperature and remains after the temperature has fallen to normal. It is therefore useful in diagnosing very early cases and also those seen after the acute symptoms have passed off. I believe this œdema of the uvula is a certain sign of influenza. The present epidemic will give many medical men an opportunity of observing this sign.

I am, Sir, yours faithfully,

Bedford, March 28th, 1908. W. GIFFORD NASH.

THE PRESENT PROSPECTS OF THE MEDICAL PROFESSION.

To the Editor of THE LANCET.

SIR,—I have to sincerely thank you for the patient and impartial hearing you have given me on the above matter and, if I am not mistaken, time will show that there are a great many besides myself—general practitioners, "specialists," and public—who will also have reason to be grateful to you. If Dr. Saundby will refer to my letter of March 14th ult. he will see that I specifically mentioned that "the patient or the patient's friends must needs agree" to my proposal: that *one-third* of an upset fee for surgical (or special medical) treatment and after-attendance with assistance at operation be paid "on the nail" to the family practitioner and two-thirds to the so-called "specialist," the fees of either practitioner ranking equally as when and how paid or payable in due proportion. Dr. Saundby has no doubt misunderstood me and as a consequence has misrepresented me, so that his "slight modification" was quite unnecessary.

The main point is, that my proposal is, according to Dr. Saundby, late President of the British Medical Association, chairman of its ethical committee, member of the General Medical Council, and an acknowledged author of a valuable work on ethics, "*a perfectly honest and fair transaction.*" That is my point fully conceded and the rest does not now matter.

What is to be expected from this important reform in medico-chirurgical tariff? (*a*) It will be a powerful lever in stopping hospital abuse; (*b*) it will meet the pockets of patients whose resources are slender, but who desire to pay for what they get in proportion; (*c*) it places the interests of the general practitioner and "specialist" on an equal

footing; (*d*) it insures the practitioner retaining his patient as his own; (*e*) the interests of patient, family practitioner, and "specialist" are now co-extensive, co-equal, and identical; (*f*) a fair chance in life is given to the younger and lesser lights amongst the "specialists"; and (*g*) the amenities of honourable and amicable dealing between the two grades of practitioners will be assured. And all this by a proposal which has been pronounced "*a perfectly honest and fair transaction*" in THE LANCET.

I am, Sir, yours faithfully,

F. W. FORBES-ROSS, M.D. Edin., F.R.C.S. Eng.

Harley-street, W., March 30th, 1908.

DEATHS DURING ANÆSTHESIA.

To the Editor of THE LANCET.

SIR,—Certain reports which have recently appeared in the lay press seem to render it desirable that I should make my position with regard to the agitation now proceeding quite clear. 1. I maintain that a certain number of deaths from anæsthetics is inevitable. 2. In the majority of cases referred to by the coroners the primary cause of death was the nature of the accident or disease from which the patient was suffering and only very remotely the anæsthetic. 3. That even if one accepts the coroner's figures, they afford no justification for alarming the public in the way which is being done, either in themselves or in comparison with the enormous number of operations which are now performed. 4. All who administer anæsthetics are, I am sure, very willing that full inquiry should be made into their methods and results; but I, at any rate, firmly maintain that a coroner's court is not the proper place where, nor are the coroner and his jury the proper people by whom, such inquiry should be conducted. 5. Inasmuch as the tendency to a fatal result is to some extent influenced by the mental attitude of the patient, appeal is made to the coroners to assist in keeping out of the lay press all sensational reports and misleading statements which might tend to create a condition of panic in the public mind.

I am, Sir, yours faithfully,

J. FREDK. W. SILK.

Devonshire-street, W., March 31st, 1908.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Medical Inspection of Children in Birmingham.

THE education committee recently discussed and adopted the report of the elementary education subcommittee upon the medical inspection of school children. The subcommittee recommended that for the purposes of the inspection three medical practitioners and three women attendants should be appointed. The practitioners are to be appointed for one year, with eligibility for reappointment for a second and a third year, and the salary offered is £250 per annum. The salary of each woman attendant is to be £50 per year. The subcommittee further recommended that the present medical superintendent should be converted into the medical officer to the education committee, who should be held responsible for the whole work of inspection and the recording of the results obtained. It is scarcely probable that under the terms of the appointment any but comparatively inexperienced practitioners will be secured for the work of inspection, and it may be questioned whether they will be able to make an examination giving results of any great value in the ten minutes which is the time given as that probably required for each examination. It is estimated that the cost of the scheme will be £1500 per year but there can be no doubt that this sum will be considerably exceeded in the future. The scheme has yet to go before the council and it may meet with considerable opposition.

Food Poisoning.

At a recent meeting of the Midland branch of the Incorporated Society of Medical Officers of Health held in Birmingham there was an interesting discussion upon the subject of food poisoning. We are all familiar with the fact that bacteria may produce poisons in the foods which we eat or they may be introduced into our bodies with the food and act directly upon us. It is perfectly true, as Dr. R. A. Lyster pointed out, that with regard to ptomaines or to the direct action of bacteria there are personal idiosyncrasies and some of us may be immune to many potent organisms or poisons, but we cannot depend upon that immunity, consequently we are all anxious to know exactly where the danger lies and how it is to be avoided. Upon this point, however, the discussion threw no very clear light. Dr. A. Bostock Hill and Dr. H. Malet are impressed with the danger of leaving flesh intended for food in slaughter-houses and they would guard us by insisting upon the entire separation of slaughter-houses from the places in which food is further prepared for consumption. Dr. Robertson and Dr. Lyster appeared to be impressed with the idea that danger lay mainly in the gelatin either produced or used in the course of the preparation of foods. The discussion may lead to further useful investigations but as the matter stands the laity, and even those partially initiated into the mysteries of bacterial action, will have to live in the hope that they may avoid danger, for apparently no easily applied method is known by which the presence of dangerous bacteria and ptomaines can be recognised, and it is obvious that every meat pie and joint of meat cannot be submitted to scientific investigation before it is eaten.

Midland Reafforestation.

Some data suggestive of distinct advances in the near future were brought forward at the recent annual meeting of the Wolverhampton section of the Midland Reafforesting Association. Apparently, according to the report, no very large amount of planting has actually been done during the past year, 5½ acres of pit mound at Spring Vale and 3½ acres near the Bilston Fever Hospital representing the total of the planting, but the interest of landowners and others has been much stimulated. This is evidenced partly by inquiries and partly by the fact that villages on the outskirts of the district are taking the matter into their own hands and the people of Ocker Hill are planting trees in their own streets. These and other favourable signs indicate that probably in the near future opportunities for more extensive work will be placed in the hands of the Wolverhampton section of the above society.

March 31st.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Sanitary Reformers.

THE annual meeting of the Manchester and Salford Sanitary Association was held on March 27th, under the presidency of the Lord Mayor. In moving the adoption of the report he spoke of the necessity of such an organisation to look after grown-up people, because it was they unfortunately who caused most of the trouble. He advocated better supervision of the milk-supply, for though no doubt as pure in Manchester as in any other city in the kingdom, "it did not follow that it could not be improved." They did not want to harass traders but to see that the supply should be "perfectly pure, or as pure as possible." The meeting was well attended, but it is not to the credit of Manchester that a society so useful, indeed so indispensable as a help to the official custodians of the sanitation of the city, should from the apathy and indifference of a large proportion of the well-to-do be crippled in many directions by want of funds. A widespread small subscription would in many ways be better than large sums from the few. An address was given by Mr. H. J. Tennant, M.P., on the "Children's Health Charter," and Mr. W. Thomson, F.R.S., gave a demonstration on the Air of Schools, &c. Mr. Tennant said that the medical inspection of school children should be only the first step towards a greater and wider scheme of school hygiene. The obvious corollary of it was medical treatment. It is, of course, much to be desired that when children require it they should be medically treated, but to some of us, who may be considered very backward, it seems not altogether wise to reduce parental responsibility to the vanishing point, and there may be a difficulty in doing all the parent should do and at the same time to guard against the loss to him of this sense of responsibility and of the family affection which would soon follow. Let help be given if need be, but so as to do as little injury as possible. Scoffers might say that surely if it is necessary for the community as a whole to assume the charge of the

children it is quite as important that the parents should be in the finest physical condition and they should therefore be carefully selected so that the stud farm might show satisfactory results. An era of perfection has not yet arrived and may possibly not be hastened by the best intentioned panaceas, so that for the present we must go on doing what can be done by individual effort, by individual help such as is given by the Ladies' Sanitary Association, and by the cultivation of sincerely friendly relations between the various sections of the people. In regard to all these matters it is to be hoped that after the throes and strife of the present educational turmoil a more practical, more impressively moral, and less lifeless, machine-made education may be evolved.

The late William Walter, M.A., M.D. Dub., F.R.C.S. Irel.

Manchester has sustained a serious loss by the death of Dr. William Walter who for many years had stood in the front rank of the local medical profession. He was honorary surgeon to St. Mary's Hospital and to the Manchester and Salford Lying-in Hospital, and contributed many papers to the medical journals on gynæcological subjects. His body was cremated at the Manchester crematorium on March 20th. In addition to the widow and sister there were many private mourners and a large attendance of medical and other friends, some of whom represented the Medical Society of Manchester, the Clinical Society, the South Manchester Division of the British Medical Association, and other societies.

Ink Applied to Scalds.

A child, three years old, was playing in the kitchen on March 25th, when, as small children are prone to do, he pulled over a vessel of scalding hot coffee. His back was severely scalded and he died in the Manchester Royal Infirmary on the next morning. When the child arrived at the infirmary his back was covered with ink. The father said that he thought the ink would do the scalds good. The coroner remarked that it was the most weird thing he had ever heard of to put ink on wounds received by scalding and the foreman of the jury added that it was a most ridiculous thing to do. With these opinions many will agree.

March 31st.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

The Notification of Pulmonary Tuberculosis.

A CONFERENCE was recently held at Merthyr Tydvil on the initiation of the board of guardians to consider the desirability of making pulmonary tuberculosis compulsorily notifiable within the Merthyr Tydvil union. Those who took part in the conference represented the corporation of Merthyr Tydvil and the district councils of Aberdare, Gelligaer, and Rhigos, and Vaynor and Penderyn. Mr. J. L. W. Ward, the medical officer to the workhouse, said that compulsory notification would enable the sanitary authorities to advise those responsible for the care of patients as to the necessity for isolation and in other ways to prevent the spread of the disease. Dr. A. Duncan, the medical officer of health of Merthyr Tydvil, was of opinion that notification by itself would be of little advantage. He thought that the boards of guardians might do more than they do at present for the family of a worker when the latter was undergoing treatment and spoke with approval of the establishment of a special dispensary where curable cases could be discovered and sent for treatment to a suitable institution. Ultimately a resolution was carried approving of the principle of compulsory notification of the disease.

A Combined Sanitary District in Monmouthshire.

One of the results of the inspections of the colliery districts in the Western valleys of Monmouthshire during the past few years by medical inspectors of the Local Government Board has been a very strong recommendation by the Board to two district councils to appoint a whole-time medical officer of health to act jointly for certain adjacent districts. All the councils concerned have been very much opposed to this recommendation, but at a meeting recently held between delegates from the authorities and the medical officers of the Board the latter emphasised the advantages that would arise from the formation of a combined district and it is probable that one will now be made.

Exhibition of Week-end Cottages at Malvern.

In very many schemes for the provision of houses for the working classes it has too often happened that the dwellings when erected have not been occupied by the class of persons for whom they were intended. Rows of low-rented cottages have been tenanted by well-paid artisans and detached dwellings in garden cities have been utilised as week-end cottages by the well-to-do. The promoters of an exhibition of small houses to be erected on the western slope of the Malvern Hills state quite frankly that they do not desire the erection of houses for the working classes but small inexpensive dwellings suitable for the requirements of a better class of tenants. Prizes will be given for the best and second best of three different types of dwellings: one to contain at least four bedrooms and to be either detached or semi-detached, to cost between £300 and £500; a second to be in the form of a detached bungalow and to contain at least six bedrooms, to cost from £500 to £800; and a third of a more pretentious character to contain eight bedrooms and to cost between £800 and £1200. The land which is set apart for the proposed buildings will be let for the first year at a peppercorn rent and subsequently either leased or sold outright. The capital cost of the land will range, it is said, from £100 to £300, according to the amount and position of the plot. The parish of Colwall in which the houses will be erected is one of the healthiest parts of Herefordshire. The death-rate, according to the recently issued report of the medical officer of health, was in 1907 only 5·6 per 1000 and the average rate in the past seven years was 8·5 per 1000. Under the terms of a recent Act of Parliament the district is supplied with water from the mains of the Malvern urban district council.

March 31st.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Medical Education of Women in Edinburgh.

THE close of the winter session in Edinburgh has been signalised by a considerable amount of excitement and activity on the part of a section of those who are interested in the medical education of women in Edinburgh. To understand the position aright it is necessary to recall the steps which have led up to the present. The establishment of a medical school for women in Edinburgh was due to the energy and resourcefulness of Dr. Jex-Blake. The school which she established was not long in existence when a split occurred which led to an action at law and the starting of an opposition school. The schismatics, if the word can be used without offence, got a certain measure of public sympathy and support and an association was formed called the Scottish Association for the Medical Education of Women. A board of lecturers was appointed from the junior members of the extramural school. The association consisted of (1) persons who contributed a small sum per annum to the association; (2) the lecturers who were to pay to the association a percentage of their class fees; and (3) the students who were to pay a matriculation fee to the association. These contributions were required to meet the expenses incurred in the form of rent for premises and a lady secretary's salary, &c. A number of persons were appointed as the court of the association with a president to preside over its deliberations. The members of the court were to be appointed, so many by (1) the members of the association, including contributors to its funds, lecturers, and students; (2) by the lecturers; and (3) by the students. At first the number of students was very small, five or six, perhaps; humble but efficient accommodation was obtained in Chambers-street, including an office and a dissecting room. Some of the lectures were given in these rooms, others were given elsewhere, according to whether the lecturer had his rooms elsewhere or not. At that time women were not admitted to the degree in medicine but were admitted to the double or triple qualification given by the licensing bodies. Owing to changes in the extramural school the anatomy room and some other rooms at Minto House, Chambers-street, became available and the association rented them for the use of its students and transferred the secretary's office to them. The University, after considerable agitation, opened its degree to women and accepted the classes supplied by the Scottish

Association as qualifying for graduation on the understanding, universal in the extramural school, that the lecturers should give the same system of instruction as was given by the professors in the University and should charge University fees. For years this arrangement has worked smoothly and, judged by the success of the women students at the degree examinations, admirably. The Scottish Association was, in fact, conducting a university college of medicine for women without any expense to the University and on the whole with remarkable efficiency and success. That all the classes and all the lecturers should be of equally high excellence could not be expected any more here than inside the University itself. The male student has, however, the privilege, which is no small one, to attend the class of an extramural lecturer when the professorial class does not attract him. This is a privilege which the women students are not granted, they must attend the lectures appointed by the Scottish Association. From time to time there is a recrudescence of agitation to have the women students admitted to the study of medicine on precisely the same conditions as men are admitted. The men students studying in Edinburgh for the University degree are, it is necessary to remember, allowed to take a considerable proportion of their classes outside the University—that is, to attend the class of an extramural lecturer on any particular subject, the extramural lecturers only acquiring this status on being recognised by the University Court as competent to lecture on their respective subjects. This is one form which the agitation takes and this is the form that appeals to the most forward agitators. They want the women to be allowed to attend the class of any professor or lecturer whom they may select and alongside the men. Another form which the movement takes is to get the University to take the medical education of women into its own hands and out of the hands of the Scottish Association. Those who favour this latter object dwell upon the disadvantages which the women labour under in the preliminary scientific subjects and in physiology from paucity of equipment as compared with the corresponding departments in the University, and they warmly urge the admission of women to any class where it is thought that the professor is friendly. The idea here is that admission to one class means getting the thin end of the wedge in and that it is only a question of persistent hammering to get it wholly in. Quite recently this agitation became acute, as Minto House was sold by its owner to a trading company and the Scottish Association found itself under notice to quit. This was at once seized upon as a heaven-sent opportunity for strong representations being made to the University Court to take the medical education of women into its own hands. The University Court, putting the idea of general mixed classes aside as not to be discussed, did not see its way to make any special provision for women students and therefore did not see any advantage in even discussing the position with representatives of the Scottish Association. Soon after this decision had been intimated the annual meeting of the Scottish Association was held. At this meeting a few of the lecturers were present, some lay members of the association, and the women students in full force. A motion was submitted by one of the leaders of the students expressing regret at the action of the University Court; an amendment was proposed by another student but the motion was carried by a large majority. This annual meeting elects the president, two vice-presidents, and three other members of the court of the association, the other four members being elected, two by the students and two by the board of studies—that is, the lecturers. The students are all members of the association and as there are over 100 students they only require to be organised to make the association represent their views. This year they were so organised and the annual meeting, after the chairman's statement was concluded, reminded one of a students' debating society. The speaking was good and warm in complexion. This is a fair representation of the position of those who are responsible for the present or recently acute phase of this agitation. The other side is as follows. The lecturers to the women in most instances lecture to men also but usually separately. In fact, the sanction of the University Court has to be obtained to have a class mixed and the sanction has to be obtained annually. The lecturers to the women are unanimously and strongly opposed to a general mixing of the sexes in the medical classes. This is also the view of the other extramural lecturers. It is understood that this view predominates amongst the medical professors. The men students are believed to be likewise opposed to such mixing. The active sympathisers, the majority of the women students and the women who write letters to the newspapers, see no reason why young men and young women should not sit side by side in the medical classes. The fact, however, remains that in the opinion of the great majority of lecturers, including probably professors, this is warmly opposed. This view is also, so far as is known, the only one held by the University Court. The students' view preponderates on the court of the association, as, of course, it is bound to do as soon as the students are organised on the lines indicated above. The position is a unique one and reminds one of Lord Dundreary's answer to his own conundrum: "Why does a dog wag its tail? Because if the dog didn't wag its tail the tail would wag the dog." Which is the dog and which is the tail may be left to the opinion of the two courts—the University Court and the court of the Scottish Association. Meanwhile it may safely be said that an agitation of this nature amongst students cannot but distract them from their studies and must foster a spirit of unrest and dissatisfaction which does anything but help either the teachers or the taught.

Church of Scotland Deaconess Hospital, Edinburgh.

The thirteenth annual meeting of the friends and supporters of this interesting charity has been held, with the Moderator of the General Assembly presiding over it. In the report submitted to the meeting it was shown that the number of patients who were treated in the hospital was 364, the average daily number being 24. The number of surgical operations performed was 268. The rate of mortality of patients under treatment was 4·3. The number of visits paid by the district nurses attached to the hospital was 4032. The number of surgical out-patients numbered 570. The total sum available for upkeep amounted to £1806, while the total expenditure was £1752. The chairman in his remarks indicated the hold which the hospital had taken on the members of their church and said that it was one of the best supported and the most popular of the church's agencies. The hospital authorities are to be congratulated on the economy with which the hospital is conducted as well as on the satisfactory state of their finances and the excellences of the work done by the members of the medical and the surgical staff.

Proposed Memorial of the late Professor Annandale.

A meeting has been called to consider what steps can be taken to establish a memorial of the late Professor Annandale.

Medical Relief of the Poor of Glasgow.

At a recent discussion under the auspices of the sanitary and social economic section of the Royal Philosophical Society of Glasgow interesting statistics were submitted regarding the medical relief of the poor in Glasgow. To give an idea of the number entitled to the services of the parish medical officers it may be stated that the number of persons on the roll for outdoor relief is 3581 and their dependents number 4544, making a total of 8125 possible patients. These figures, of course, refer entirely to the parish of Glasgow and to those who might be called the legal poor—i.e., those relieved under the Poor-law Acts. In addition, during last year 1477 medical relief orders were granted to persons not on the roll who, on account of their circumstances, were unable to provide medical attendance or medicines for themselves or for those dependent upon them. During last year the parish medical officers attended 10,576 patients either in their own homes or at the dispensaries. The total expenditure incurred during the year in outdoor relief was £3001, of which £1101 were expended on medicines and the remaining £1900 represented the combined salaries of the 19 medical officers. On the year's working the average cost per patient was 5*s.* 8*d.*, of which 2*s.* 1*d.* represented the cost of medicines, &c., and the balance, 3*s.* 7*d.*, represented the cost of medical attendance. It is to be noted that the cost of medical attendance would be less if the medical officers' duties were confined to dealing with cases of sickness only. Under the present system, however, every applicant for parish relief must be examined by a medical officer and a certificate given as to the state of his health on every application, no matter how short an interval elapses between each. As regards indoor medical relief, the parish council of Glasgow provides for the care of the sick and indoor poor as follows: Stobhill Hospital, with accommodation for 1922 patients; Eastern Hospital, 380 patients; Western Hospital, 260 patients;

Barnhill Poorhouse, 2542 patients; or, in all, 5104 patients. The cost of indoor medical relief for last year was £6556 at Stobhill Hospital, £2562 at the Eastern Hospital, £1916 at the Western Hospital, and £1795 at Barnhill Poorhouse. The medical cost of each patient in the various hospitals thus varies from 1*s.* 5*d.* to 3*s.* 11¾*d.* per week.

Cancer Hospital, Glasgow.

Glasgow will soon be furnished with a perfectly equipped Cancer Hospital in Garnethill, where large extensions to the old building are at present in progress. These extensions are estimated to cost £21,550 and towards this the directors have already in hand £17,980, including the sum of £1500 given by the corporation.

Frozen Boneless Meat.

The veterinary surgeon of the corporation of Glasgow has been asked to report on the regulations which in his opinion should be issued under the powers of the Public Health (Regulations as to Food) Act, 1907, in regard to frozen meat. In his opinion all meat imported from over seas ought to be presented for examination in such a form as to enable the inspectors here to revise the work of inspection at the place of slaughter. To enable this supervision to be exercised he suggests that all meat should be presented for examination as follows: beef, either in sides or quarters; mutton, lamb, and veal in carcasses; and pork in sides. Were such regulations to be enforced all boneless meat or scrap would be entirely excluded. He suggests that stripping or tampering in any way with the serous membranes should be prohibited and certain groups of the lymphatic glands ought to be mentioned specifically as requiring to be retained *in situ*. Provision should also be made that all pork imported into the country is examined microscopically for trichina spiralis. All preservatives other than common salt ought to be prohibited. In order to facilitate such work of inspection all imported meat ought only to be permitted to enter the country through certain specified ports. In that case it is suggested that the inspection staffs should be appointed and paid by Government and not by the local authorities.

The Glasgow Royal Infirmary Club.

Although for many years the past and present residents of the Glasgow Royal Infirmary have had an annual dinner it was only last year that as a result of these meetings the "Glasgow Royal Infirmary Club" was formed. The first annual dinner of the club was held in the Grosvenor Restaurant last week, Dr. John Aikman of Guernsey being in the chair. There was a large attendance of past and present residents and a very enjoyable evening was spent. The committee of the club is preparing for publication a list of all past residents from the opening of the infirmary in 1795. The list is particularly interesting in showing the great development of the work done since that time. In 1796 there was only one physician's clerk. In 1798 a surgeon's clerk was appointed but he also officiated as apothecary and in some years as chaplain in addition. Now there are 15 resident assistants. In preparing the list there has been some difficulty in obtaining addresses for the names on the roll and it is hoped that all past residents who have not received notice of the dinner will communicate with the secretary, Dr. James Scott, 103, Hyndland-road, Glasgow, and will give what information they can concerning the men of their time. The subscription for the life membership of the club is 10*s.* 6*d.* and it has been arranged that the annual dinner will in future be held on the second Friday in March.

March 31st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

University Bill for Ireland.

Mr. Birrell's University Bill for Ireland, considering the grievous nature of the difficulties presented by the question and the long-standing of those difficulties, has been received by the country concerned with a good deal of the pleasure that it deserves. Absolute satisfaction was not to be hoped for, and the criticisms both of Belfast and the Royal College of Surgeons in Ireland were anticipated and to some extent are reasonable. But the general feeling appears to be that the passing of this Bill will give a vast impetus to professional education in Ireland, a consummation which all medical men must devoutly desire.

Emigration from Ireland.

In 1907 the total number of emigrants who left Ireland was 39,562, an increase of 3644 as compared with 1906. Of these emigrants the males exceeded the females by 3000, and it is deplorable to find that 84 per cent. of all the people who left Ireland in 1907 were between the ages of 15 and 35 years, while it is noteworthy that the age period of between 20 and 25 years furnished the largest numbers of both males and females, showing that young men and women in their prime who ought if possible to be retained in the country are leaving it, to the great loss and injury of the country. The only one of the four provinces that did not show an increase in the number of its emigrants last year was Connaught, in which a decrease of 310 was reported.

The Recorder of Dublin on Crime and Insanitation.

The Recorder of Dublin took the opportunity, in opening the business of the city criminal sessions on March 26th, to refer at some length to one of the most important questions now engaging the public attention of our citizens—the housing of the poor and the connexion of the same with public health and with public morality and political justice. After congratulating the grand jury on the comparative freedom of their city from the graver classes of crime, in which it compares so favourably with many or most of the other large cities of the Empire, the Recorder passed to a consideration of the housing of the working classes. The transition exposed the contrasted conditions: while the slums of Dublin are conspicuously free from the worst forms of crime their physical conditions present a bad pre-eminence. The Recorder declared, as so many have declared before him, that the wretched dwellings of the poor were "largely the source of the drink evil, most certainly the source of the disease, and in many respects the cause of the crime, such as it is, which prevails in the city." He continued: "I cannot conceive the existence of the present condition of the houses of the working classes except upon the supposition of the long subordination of the interests of the poor and humble to vested interests in their disease, misery, and vice. I trust that some measure will be found to enable this eating canker in our midst to be eradicated. It affects the physical and moral well-being not only of our poorer citizens but of every inhabitant of the city." The truth of these remarks is well known to every observant citizen, and the one encouraging feature connected with their enunciation is that in coming from such a source they are sure to receive a great deal of attention. In Dublin 24,000 families are living in single rooms, and it is to the effects of this appalling prevalence of *tenement-room* residence of so large a proportion of the families of the whole population of the city that the proverbially high mortality of the Irish metropolis is really due.

Election of Professor of Medical Jurisprudence and Hygiene in the Catholic University, Dublin.

The vacancy in the professorship of medical jurisprudence and hygiene, which was recently created by the sudden death of Professor Antony Roche, was filled on March 27th by the election of Professor E. J. McWeeney who already occupies the chair of bacteriology in the Catholic University. The reputation of the new occupant of the chair has been so well established for a considerable number of years in the science of bacteriology and in the various domains connected therewith, that no surprise was expressed at the double nature of the duties which he will now discharge in the teaching staff of an important and growing medical school. The wide range of Professor McWeeney's attainments have always been highly appreciated by his pupils and his colleagues; while in the pathological section of the Royal Academy of Medicine in Ireland—of which he is an ex-President—his communications have always been heard with great interest. He is also bacteriologist to the Local Government Board in Ireland; and his contributions to such periodicals as the Journal of the Department of Agriculture, the Journal of the Royal Agricultural Society of England, the Proceedings of the Statistical Society of Ireland, and the Proceedings of the Royal Dublin Society are always characterised by their practical utility.

Royal Victoria Hospital, Belfast.

At the 115th annual meeting of the corporation of the Royal Victoria Hospital, Belfast, held in that institution on March 23rd, it was reported that during the past year there had been 3080 new intern patients, which with the 201 remaining over from the previous year, made a total of 3281 cases treated in the wards during the twelve months of

1907. Of these, 1305 were medical and 1775 were surgical. There were 1360 surgical operations. The average mortality was 4·09 per cent. In the extern department 29,433 were treated. The total number of cases (dental included) treated in the hospital, intern and extern, amounted to 32,513, while at the Martins Children's Hospital, at the Throne Convalescent Home, and in the consumptive department 334 convalescents were received and 116 children were treated, as well as 47 consumptive patients. The following figures give some idea of the work of the hospital. During the year 1583 ambulance cases were received, 1360 operations were performed, and there was an average of 465 patients treated every day in the year, of whom 223 occupied beds in the hospital. Financially for the first time in the history of the new hospital there was an excess of expenditure over receipts of £548. The Right Rev. Dr. Crozier, Bishop of Down, who presided, in moving the adoption of the report, spoke very warmly of the value of the institution in training the rising generation of medical men. Among the members of the medical profession who spoke at the meeting—which was very largely attended—were Dr. H. L. McKisack (secretary of the medical and surgical staff), Sir John Byers, and Dr. W. Calwell.

The Belfast Samaritan Hospital.

At the annual meeting of the supporters of this charity (the Lord Mayor presiding) on March 23rd it was reported by Dr. G. A. Hicks that during the past year 683 patients had been treated in the extern and 200 in the intern department of the hospital. Financially the debt at the end of the year was reduced to £89 and a sum of over £3000 is invested. In their report the medical staff suggested that as the wives of men of the labouring class as distinguished from the artisan class have from time to time to be refused admission owing to their not being able to pay the minimum fee of 10*s.* per week, such cases after admission should have a rate fixed by the ladies committee on inquiry into their circumstances. This procedure when used in other hospitals works satisfactorily.

The "Abbey" Sanatorium for Pulmonary Tuberculosis.

Mr. Robert Hall, physician to the Belfast union infirmary and to "The Abbey" sanatorium for pulmonary tuberculosis, has just presented to the sanatorium committee of the Belfast board of guardians a most interesting annual report as to the condition of patients who were treated for consumption in that excellent institution during 1907. During this period 311 patients were treated, of whom 163 (40 married, 14 widowed, and 109 single) were women and 148 (48 married, 13 widowed, and 87 single) men. Of these 115 are still under treatment. Of these 311 patients the following was the age incidence :—

From 5 to 10 years of age	6
,, 10 ,, 20 ,, ...	59
,, 20 ,, 30 ,, ...	100
,, 30 ,, 40 ,, ...	82
,, 40 ,, 50 ,, ...	45
,, 50 ,, 60 ,, ...	14
,, 60 ,, 70 ,, ...	5
Total	311

These are statistics which prove that advancing age does not give immunity from pulmonary tuberculosis. Of the 196 patients who left the sanatorium during the year 30 per cent. were so much improved that they returned to their ordinary avocations; 33 per cent. were considerably improved but were not able to do full work; and the remaining 37 per cent. remained in a stationary condition or the disease being in a too advanced stage on admission did not respond to treatment. 10 per cent. of the total number (311) treated died. Mr. Hall expresses the regret that so many persons when they are attacked by pulmonary tuberculosis either do not appear to realise the absolute necessity for early treatment or the gravity of their condition till they are completely broken down in health and frequently in a stage of disease when there is little or no hope of cure; if they did he thinks that there would not be so many hopeless cases admitted to the wards of the institution or so many homes poisoned by the germs emanating from the advanced cases. Mr. Hall says in admitting patients preference when possible was given to the "bread earners," and he points out the great benefit and possibility of an open-air life, for at least 25 per cent. of the patients slept on the verandahs during the winter. He advocates compulsory notification of pulmonary tuberculosis and he points out that patients transferred from the union infirmary to the sanatorium showed a distinct advance in their progress. Quite recently (since this report was written) the hospital block has been opened for the reception of patients and has been almost filled by the transference of patients from the union infirmary—the number at present under treatment being 256. It is interesting to note that since Mr. Hall took the great forward step—nine and a half years ago—of separating the consumptives from the other patients in the Belfast union infirmary (the first union infirmary in Ireland where this segregation of consumptive patients was done) over 6000 such cases have been treated in the infirmary and sanatorium. The Belfast board of guardians and its excellent medical officer, Mr. Hall, have in their treatment of consumptive patients given an object-lesson to the rest of Ireland.

March 31st.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Action of Radium on the Blood.

AT a meeting of the Biological Society held on March 14th M. Aubertin and M. Delamarre communicated the result of some researches which they had made as regards the action of radium upon the viscera and especially upon the blood-forming organs. White mice were submitted to radium emanations, the effects brought about being very similar to those produced by the x rays. After exposure to the emanations for one hour marked leucocytosis occurred. Sometimes, however, during the second hour a marked diminution in the number of leucocytes occurred, which persisted more or less after the radium had been withdrawn. During this period the blood counts showed an excess of polynuclear cells, and leucocytes in course of histolysis were found in the blood. Daily exposure to the emanations brought about marked leucopenia and a diminution in the number of red cells. Prolonged exposure to the rays gave rise to necrosis of the follicles of the spleen and a fragmentary condition of the Malpighian bodies (*noyaux*). An irradiation of less duration did not give rise to any splenic lesion but leucopenia was very marked.

An Ambulance drawn by a Dog.

Lieutenant Puisais, of the camp at Ruchard, proposes the employment for ambulance work of a wheeled stretcher drawn by a dog. The ambulance is mounted on a spring four-wheeled carriage. The front wheels are 49 centimetres in diameter and the hind wheels 60; the axles are removeable at pleasure. A trial of this method of transport was made at Poitiers with a policeman acting as the wounded man and the dog mounted without difficulty a gradient of very considerable pitch; on the return journey, instead of the policeman, the stretcher was loaded with 90 kilogrammes of sand (about 14 stones). The weight of the stretcher and the carriage is 30 kilogrammes and in the absence of the dog can easily be drawn by a man or even by a child.

Quinine in Algeria.

The Syndicate of Pharmacists of the department of Algiers has approved in principle of the sale of quinine at a price and in a form laid down by the Government. The syndicate hopes, by giving its approbation to these regulations, that the risk of the sale of quinine falling into the hands of foreigners will be avoided.

The Treatment of Hæmarthrosis.

At a meeting of the Surgical Society held on March 11th M. Lucas-Championnière recommended light massage applied directly to the muscles in the treatment of hæmarthrosis, and, contrary to the experience of some other observers, he considered that massage alone was sufficient to obtain muscular regeneration. Gentle massage of the joint should also be practised with passive movement, but care should be taken that no pain is produced. Any active movement should be made with great caution and should only last for a very short time. As to the regeneration of the muscular tissue M. Lucas-Championnière thought that no good result could be obtained by demanding a maximum of effort from the muscle at the outset, for this demand, he said, would be very likely to bring about muscular atrophy.

Jubilee of Dr. Magnan.

Quite recently the pupils and friends of Dr. Magnan,

Member of the Academy of Medicine and physician to the Asylum of Saint Anne, presented him with a medal in honour of his completion of 50 years' professional service. The President of the Council of Ministers and many professors of the Faculty of Medicine were present. Various speeches were made, amongst others one by M. Bajenoff in the name of sundry scientific societies of Moscow, and one by M. Lodame, speaking for Swiss experts in mental diseases. Dr. Magnan, who was much moved, warmly thanked those present in an eloquent speech. The medal, which is the work of M. Paul Richer, a Member of the Academy of Medicine and of the Academy of Fine Arts, bears on one side the bust of Dr. Magnan, while on the other he is shown surrounded by his patients and friends.

March 30th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Small-pox Scares.

SPORADIC cases of "vaiuolo nero," or black small-pox, occurring in Rome (but immediately isolated, with further spread of the disease circumscribed) have been magnified by report into something like an epidemic, much to the alarm of the public, resident or migratory. Hardly had this scare died down when another, this time affecting Naples, loomed large on the hygienic horizon, to disappear in turn under the searchlight of the public health officer. On March 24th the steamship *Montevideo*, of the "Compagnia Transatlantica" of Barcelona, hailing from Vera Cruz, dropped anchor in Neapolitan waters and immediately the rumour got abroad that ten cases of death from malignant small-pox had occurred among the passengers. The vessel was at once put in quarantine and a rigorous inquiry was instituted by the sanitary authority. Not one case of small-pox was verified but measles affecting 20 of the children on board was noted. The little patients were forthwith conveyed to the "Ospedale Cotugno" and the *Montevideo* was allowed to resume its voyage.

The "Bitter Cry" of the Cliniques.

Commenting on the recent State trial in Italy and the malversation to personal or political interests of funds reserved for schools and universities, THE LANCET drew attention to the deplorable condition of research and clinical work in Italy as "literally starved" in comparison with the same work in other nations. On March 26th His Excellency Signor Rava, Minister of Public Instruction, had a prolonged interview with a deputation of Piedmontese Members of Parliament on the "cliniche chirurgiche" in the University of Turin, all insufficient as these are for the requirements of the city and school. In the course of discussion His Excellency pointed out that Turin did not stand alone in asking from the Government increased support for its clinical accommodation and equipment—the Lombard school, represented by Pavia, being only another of the many seats of medical instruction clamouring loudly for similar aid. The Piedmontese deputies, however, had small difficulty in strengthening the claims of Turin to exceptional consideration and support, as the cost of land and of manual labour was much higher in the sub-alpine capital than in other Italian centres. His Excellency thereupon undertook to consult his colleague of the Treasury in the interests of Turin, with the result, it is hoped, of accelerating the measures required to put that great medical school on a level with its French, its Swiss, and its German sisters.

The Garibaldi Hospital.

True to his humanitarian ideal, the knight-errant of Italian freedom and unity left, among his death-bed dispositions, an injunction to found a hospital for the ailing or infirm poor among the islanders of the Straits of Bonifacio. His wishes have at length been complied with and the "Ospedaletto Giuseppe Garibaldi" on the Maddalena is now in effective working. With the exception of the "ambulatorio" (out-patient department) the hospital had recently been closed for reasons relating to the *personnel*. Donna Costanza Garibaldi (to whom the hospital owes so much) now writes to the *Tribuna* that the wards were reopened on March 25th (Feast of the Annunciation) under the supervision of a new directress who (she says) has been trained "nei primari ospedali Inglesi" (in the leading English hospitals).

Obstetric Aid to the Poor.

Thanks to the presence of a public-spirited physician in her communal council, Florence is now provided with organised aid to necessitous females "nei casi imprevisti e gravi del puerperio" (in unexpected and serious cases during and after parturition). Dr. Guido Banti, professor of pathological anatomy in the Istituto di Studi Superiori (the common councilman in question) was able to announce on March 27th that this service, instituted and organised by him, is quite gratuitous, one of the contributors to it being his colleague, Dr. Giuseppe Resinelli, professor of obstetrics and gynæcology, with the *personnel* attached to the "clinico d'ostetricia" in the same school. The movement is quite in keeping with Tuscan initiation in matters medical, of which (as I write) another instance reaches me from Rovezzano, where a series of popular lectures is to be addressed to mothers of families on the health conditions to be observed in their households. Dr. Lapo Falcioni of Florence will inaugurate the course on April 5th.

March 28th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Retirement of Professor Chrobak.

Professor Chrobak has resigned his position as professor of gynæcology and obstetrics, six years before reaching the legal limit, on account of his opinion that the work in the new clinic must be conducted by a younger man. He took leave of his former pupils and his fellow workers in the hall of the new clinic which will be available for the use of the public in a short time and a bust of him, beautifully executed by his daughter, was unveiled on this occasion in the hall as a good omen for the future of the new house. The assemblage included all his former assistants, most of whom are now professors and *privat-docenten*, representatives of the University and the medical staff of the army, his successor, and the staff of the medical faculty. Professor Chrobak thanked them for the many marks of kindness which they had shown to him and expressed confidence that the new clinics and the new hospital would once more as in former years attract the best men from all parts of Europe to work in Vienna. Continuing, he said that above all scientific work the physician and the surgeon must keep in mind that their first duty must be, "help, not harm"; and they must always do their best, whether in operation or in advice. Professor von Rosthorn, a former pupil of the retiring surgeon and now his successor, then described the remarkable individuality of Professor Chrobak who introduced the axiom that the function of medical or surgical intervention is only to help physiological processes. He said that in Professor Chrobak's operating theatre and lecture room the students would find displayed on the walls the admonition, "Primum non nocere." Professor Chrobak, who 19 years ago was with difficulty induced to accept the post of director of the clinic and clinical lecturer, soon made the clinic a notable place by the exactness of his diagnosis as well as by his surgical skill and the adoption of the newest methods of treatment. Dr. Peham, who is at present Professor Chrobak's first assistant, will act as temporary director of the clinic until Professor von Rosthorn takes over the new premises, which will not be before May or June.

A New Method of Approaching the Bulb of the Internal Jugular Vein.

Acting on a suggestion given by Professor Tandler, Dr. Bondy recently employed a new method of approaching the bulb of the internal jugular vein in a case of sinus thrombosis after acute mastoiditis, and the patient, who was a girl, was shown at a meeting of the Gesellschaft der Aerzte. She had been suffering from acute mastoiditis of two weeks' duration. As her temperature rose to 104·5° F. the mastoid process was opened and thrombosis of the sigmoid sinus was found. The thrombi were removed, but only the upper part of the sinus was afterwards freed for circulation. The lower portion of the thrombus could not be reached. As the temperature remained high and a rigor occurred it was resolved 24 hours after the first operation to open the bulb. The jugular vein had been ligatured the day before. The two incisions were united, thus exposing the sterno-mastoid muscle, which was retracted, and the spinal accessory nerve and the jugular vein were brought into view up to the jugular foramen. The facial nerve was also laid bare on the stylomastoid foramen, the apex of the mastoid process was removed, the biventer muscle was

loosened, and after ligature of the occipital artery the bone covering the sinus and bulb was removed with the chisel, the anterior margin of the field of operation being marked by the facial nerve. In this way the whole vessel, consisting of the sinus, the bulb, and the internal jugular vein, was exposed and opened, whereupon the remainder of the thrombus was removed. It consisted of a yellow thick mass full of streptococci. The patient made an uneventful recovery except for a slight paresis of the facial nerve, probably caused by dragging on the nerve during the operation. The main advantage of this method as compared with the older operation of Grunert was the fact that the accessory nerve was not injured.

Ultra-Violet Rays in the Treatment of Syphilis.

In a series of experiments, the results of which have been communicated to the Gesellschaft der Aerzte, Professor Ehrmann has studied the effects of ultra-violet light (uviol light) on the pigment anomalies of the skin, and in the course of the investigations he noticed that syphilides of the skin, especially on the parts generally covered by the clothing, responded very quickly to the rays. The exposure lasted only for a short time so that there was merely a slight reaction unattended with erythema. The effect was decrease of the swelling and pigmentation on the second day, while the efflorescences dried up on the next day and eventually disappeared. A gumma of the skin was exposed to the rays three times; four days later it was covered by healthy epidermis and became almost entirely absorbed. The method would therefore, he considered, be valuable for the local treatment of refractory syphilitic lesions of the integument. Control experiments showed that the action of the rays was confined to the exposed space. For instance, the left arm could be made to appear healthy whilst the right arm which was treated by means of mercury without exposure to the rays still showed the exanthem.

Problems of Growing and Living.

By invitation of the Vienna Society for Internal Medicine and Pædiatrics Professor Rubner of Berlin, who has made a special study of questions relating to development and growth, delivered a lecture on this important subject at a recent meeting of the society. He said that the main factor influencing the growth of the child was the inherited rate of cell proliferation and cell division, and that it was not entirely dependent on the quantity of calories contained in the food ingested. The weight of the newly born creature was doubled by growth in very different intervals in different animals. For instance, to double its weight the newly born progeny of the cat required nine days, that of the rabbit six days, that of the dog nine days, that of the pig 14 days, that of the sheep 15 days, that of the cow 47 days, and that of the mare 60 days, while the human infant required 180 days. Intensity of growth was therefore very variable, but the quantity of energy required to bring about this doubling was remarkably equal in all these animals, being about 4000 calories per kilogramme of the body-weight, whilst in man it was 29,000 calories. Of the entire quantity of energy represented by the food ingested, the lower animals required about 34 per cent. for growing, whereas man required only 5 per cent. The milk of the different species therefore showed in its percentage composition the same variety in regard to quantity as was shown by the energy required for the process of growth. The only function of the sugar and fat in milk was to reduce as much as possible the metabolism of albumin in the body, so that the largest possible quantity of albumin might be free to serve the purpose of growth. The slow growth of the human body was perhaps compensated by the greater development of the brain. Man had, moreover, an exceptional position in regard to the duration of life and its relation to the duration of the period of growth. Whilst the horse lived 35 years, the cow 30 years, and the dog 11 years, the period of growth of these animals was respectively five, four, and two years—i.e., from one-sixth to one-seventh of the total duration of life. In man, on the other hand, a total duration of life varying from 70 to 80 years was associated with a period of growth from 20 to 24 years—i.e., from one-third to one-fourth of the whole duration of life was spent in the development of the body. After the completion of growth the above-mentioned animals required in their food approximately 190,000 calories per kilogramme of body-weight on an average, whilst man required 725,000 calories per kilogramme of body-weight. The living substance of man was therefore far more active in metabolism than the living substance of other warm-blooded animals; the older opinion that the contrary was the case was erroneous. The termination of life was perhaps best explained by the hypothesis that the dissociative quality of the protoplasm was exhausted when it had accomplished a certain amount of work which was equal in every species.

March 30th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Physicians as Witnesses.

THE medical profession has become sensitive as to the reputation which medical expert witnesses have acquired in the courts and various efforts are being made in different States to improve the situation. The public have come to believe that the medical expert occupies the same relation to the parties in whose behalf he testifies as does the legal counsellor—viz., a paid and therefore a partisan witness. The remedy most popular with the profession is such legislation as will authorise the courts to appoint official experts who shall be delivered from temptation by having their compensation fixed by the courts and paid by the county. This plan is opposed by the legal fraternity on the ground that it does not take into consideration the rights of the individual whose life, liberty, and property may depend upon some fact which can be ascertained only by the aid of the testimony of medical experts. A leading authority holds that the proposed legislation would infringe one of the most important of the rights of persons accused of crime—viz., the right of impartial trial and of having compulsory process for the attendance of witnesses. If opinion evidence is to be received at all it would be manifestly unjust for the law to say that the court should receive the opinion of particular individuals only, and that all others should be excluded, however eminent they might be in their special department of science.

First Naval Hospital Ship.

The United States naval hospital ship *Relief* at Mars Island, San Francisco, under the command of a surgeon, has been commissioned in accordance with the recent order of the Secretary of the Navy. This order has created much criticism and led to the resignation of the head of the Bureau of Navigation. It grew out of a decision of the Surgeon-General of the Navy that hospital ships should be under the sole control of the surgeon. This innovation was resented and violently opposed by officers of the line as destructive of discipline and efficiency but the Surgeon-General was sustained by the President and the outcome of the controversy is the fully equipped hospital ship *Relief*, with Surgeon C. F. Stokes, U.S.N., in command and Captain Le Cain of the auxiliary service as navigator. The *Relief* has accommodation for 200 patients and is as well arranged for hospital service as the best hospital on land. There are two general wards and a ward for commissioned officers. The operating room is as perfect in all its details as art and science can make it. Adjoining it is an x ray outfit, with photographic plant and dark room. There are laboratories for bacteriological and pathological research, with culture media of the most approved kind. There is a powerful refrigerating plant with facilities for cold-storing a large supply of fresh provisions and a disinfecting apparatus and an embalming department are provided. A dental office in charge of a graduate dentist is an important part of the outfit. The success of the hospital ship under the control of a surgeon will be awaited with great interest by the parties to the controversy.

The Sanitary Responsibility of Public Carriers.

The Buffalo Academy of Medicine has petitioned the Surgeon-General of the United States Public Health Service to investigate the source of enteric fever occurring among the passengers on the steamers on the Upper Lakes. This action grew out of an outbreak which occurred on a steamer plying on the lakes and which continued for three weeks, during which the sick in different stages of the fever were landed at several cities *en route*. Many passengers were taken sick after leaving the ship and on arriving at their homes. On investigation it was found that the milk was foul, the drinking water contained the colon bacillus, and the vessel was in an unsanitary condition. The water-supply

was taken from the polluted water of rivers and was the undoubted source of the fever. The total number of cases originating on this vessel is estimated to be 200, but the number which resulted from those landed at different places, and from passengers who were sick of the fever after leaving the vessel, cannot be estimated. It now appears that the source of much, if not all, of the enteric fever occurring on the passenger vessels on the lakes is due to the custom of these vessels of obtaining their supply of drinking water from the polluted rivers at the mouths of which the chief cities are located. It is also believed that the practice of landing passengers sick from enteric fever at the various cities on the route has made these vessels carriers of the pestilence. The Surgeon-General has taken prompt action and has appointed a competent commission to investigate the question of the responsibility of these passenger vessels for the dissemination of enteric fever.

The Unnecessary Noise Law.

The New York Society for the Suppression of Unnecessary Noises had been successful in securing the passage of an ordinance to prevent noise in the vicinity of hospitals and places where the sick and aged are cared for and the result is very favourable. Sign-boards are posted on the corners of the streets near by announcing a "hospital district." So successful has this effort been that the society has introduced a Bill into Congress intended to suppress unnecessary whistling of steam vessels plying in harbours about large cities. The particular harbours referred to are Boston, New York, and Philadelphia, but the Bill is general in its provisions. It has already passed the Upper House and will in due time become law.

The Finger-Licking Habit.

The medical society of the city hospital alumni of St. Louis, Missouri, has sent to the Postmaster-General, the city postmaster, and the Health Department, a communication requesting that effective measures should be taken to protect the public against danger from the practice of habitual insalivation of the fingers by those who handle mail matter. The society desires that employees addicted to this habit who, in the performance of their duties as stamp sellers, postmen, clerks, cashiers, salespeople, waiters, conductors, and so on, are necessarily in contact with the public, and who persist in so doing after notice and warning, should be deprived of their positions as thereby constituting a menace to the general health. Sanitary and medical condemnation of the practice of finger-licking rests on the proved fact that the bacteria of many of the most virulent diseases are often abundantly present in the secretions of the human throat and mouth. The paper closes with a resolution that the St. Louis Health Department should be requested to investigate and publicly to report on the prevalence of the habit of finger-licking among the employees of the departments, corporations, and concerns serving, or catering for, the people of St. Louis in order that warning may be given of the risks to health incurred by patronising places, public utilities, and establishments where such an unclean and dangerous practice is permitted.

The Plague in San Francisco.

There has been a renewed outbreak of the plague in San Francisco, proving that the infection still has a foothold in some locality. The number of cases is very small but sufficient to arouse the health authorities and the citizens to renewed efforts to clear the city of every possible source of infection. A large fund is being raised to supply an increased corps of inspectors and to meet any extraordinary expenses. The bounty on rats has been increased to 25 cents for males and 50 cents for females. A citizens' health committee has been formed to coöperate with the health department.

March 21st.

GLOUCESTER INFIRMARY.—The annual meeting of the subscribers to the Gloucester Infirmary and Gloucestershire Eye Institution was held on March 26th. The medical report stated that 1390 in-patients were admitted during 1907, an increase of 91 as compared with 1906. The out-patients numbered 8412, being 500 less than in the previous year. The average cost per bed was £84. The financial statement showed that the deficit of £956 remaining at the close of the year 1906 was now reduced to £186.

Medical News.

VICTORIA UNIVERSITY OF MANCHESTER.—At examinations held in March the following candidates passed in the subjects indicated:—

DEGREES OF M.B. AND CH.B.

Final Examination.—John Allen, C. G. Howlett, J. L. Moir, J. V. Steward, B. V. Ward, and Edgar Wharton.
Obstetrics.—F. D. Walker.
Forensic Medicine and Toxicology.—J. A. Bateman, R. J. Batty, T. B Bolton, Elsie Brown, W. C. Denniston, Frances M. Huxley, M. C. S. Lawrance, R. K. Lomas, W. P. Marshall, W. W. Martin, John Morley, John Thompson, R. B. Thompson, B. W. E. Trevor-Roper, W. W. Uttley, T. G. Williams, and A. E. Woodall.
Second Examination.—A. E. Ainscow, Rupert Briercliffe, John Cowan, Caleb Davies, E. R. Eatock, Edgar Grey, Harold Heathcote, R. C. Hutchinson, R. B. Jackson, Geoffrey Lapage, Mabel R. May, W. J. A. Quine, J. R. Rigg, J. B. Scott, W. A. Sneath (awarded distinction in anatomy and the University prize in medicine), J. P. Stallard, Charlotte E. Warner, and Gordon Whitehead.
Third Examination (New Regulations).—Pharmacology and Therapeutics.—H. E. Allanson, C. G. Brentnall, W. A. Bullough, D. I. Connolly, F. H. Diggle, H. A. Dunkerley, Gertrude H. Geller, John Gow, T. T. Higgins, N. T. K. Jordan, Niel McDonald, C. B. Marshall, Cedric Pimblett, *Harry Platt, T. M. Popple, James Ramsbottom, A. A. Smalley, Norman Tattersall, R. H. Titcombe, and J. F. Ward.
General Pathology and Morbid Anatomy.—H. E. Allanson, C. G. Brentnall, W. A. Bullough, *D. I. Connolly, F. H. Diggle, Gertrude H. Geller, *John Gow, T. T. Higgins, N. T. K. Jordon, Niel McDonald, Edith M. Marsden, C. B. Marshall, Cedric Pimblett, Harry Platt, James Ramsbottom, A. A. Smalley, Norman Tattersall, R. H. Titcombe, W. B. Wamsley, and J. F. Ward.
Public Health.—Elsie Brown, H. A. Dunkerley, W. W. Martin, Cedric Pimblett, T. M. Popple, and James Ramsbottom.
* Passed with distinction.

DIPLOMA IN DENTISTRY.

Third Examination.—Joseph Morrey.
Dental Anatomy and Histology.—T. B. Smith.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—In examinations held in March for the Degree of Bachelor in Medicine the following candidates were successful in the subjects indicated:—

FIRST EXAMINATION.

Elementary Anatomy and Biology, Chemistry and Physics.—Harold Fairclough (second-class honours), Eric Lawrence Hancock, and James Kenworthy Johnston Haworth, College of Medicine, Newcastle-upon-Tyne; John Robert Dunn Holtby, Queen's College, Belfast; and Edwin Kidd, Colin Mearns, Fred Phillips, and Alexander Gordon Taylor, College of Medicine, Newcastle-upon-Tyne.
Elementary Anatomy and Biology.—Fife Appleton, Ronald Greig Badenoch, William Leitrim Clements, Arthur Tannahill Crilley, Norman Hodgson, James Kerr, Francis James Lidderdale, Sydney Ellington Murray, Andrew Govan McFarlane, John George Ogle, Charles Henry Robson, Sidney Scott, William Arthur Slater, Thomas Copeland Storey, and Samuel Knibb Young, College of Medicine, Newcastle-upon-Tyne.
Chemistry and Physics.—Robert Ernest Bell and Arthur Sydney Hopgood, College of Medicine, Newcastle-upon-Tyne; and Russell Vyvyan Steele, University College, London.
Elementary Anatomy.—Sam Phillips Bedson and Theonie Renée Burrell, College of Medicine, Newcastle-upon-Tyne.
Elementary Anatomy, Chemistry, and Physics.—William Guy Lidderdale, College of Medicine, Newcastle-upon-Tyne.

SECOND EXAMINATION.

Anatomy, Physiology, and Materia Medica.—William George Bendle, Eliot Watson Blake, and Francis Percy Evers, College of Medicine, Newcastle-upon-Tyne; Ivor Stanley Gabe, College of Medicine, Newcastle-upon-Tyne, and London Hospital; Cyril Gray, Howard Tomlin Hunter, George Eric Warner Lacey, and Thomas Alfred Peel, College of Medicine, Newcastle-upon-Tyne; Elliot Jessie Ramsbotham, London School of Medicine for Women; Harold Frieze Stephens, Madras Medical College and Guy's Hospital; and Alfred Tulloch Thompson and Charles Sim Thompson, College of Medicine, Newcastle-upon-Tyne.

TRINITY COLLEGE, DUBLIN.—At Examinations in medicine in Hilary term the following candidates were successful:—

INTERMEDIATE MEDICAL EXAMINATION.

Part I.—Herbert de L. Crawford, Douglas M. Moffat, Hugh R. M. Ferguson, Arnold K. Henry, George F. C. Healy, Thomas A. Watson, John B. Burgess, Ernest W. G. Young, Thomas M. Crawford, Richard P. Pollard, Charles H. Denham, James Beckett, and Cecil Grene.
Part II.—Adrian Stokes, Charles M. Finny, David L. M'Cullough, Marius A. Diemont, Beatrice Hamilton, John H. Woodroffe, Peter R. Lemass, Herbert de L. Crawford, Robert Dixon, Douglas M. Moffatt, Roelof A. Albertyn, Euphon M. Maxwell, Edmond F. Lawson, Perceval G. Leeman, Thomas M. Crawford, Hilgard Müller, William P. H. Smiley, Vicars M. Fisher, John G. Ronaldson, Arnold K. Henry, John B. Burgess, George F. C. Healy, John G. Dods, Samuel V. Richardson, Arthur C. Hallowes, Victor B. Best, Richard H. Mathews, Charles H. Denham, and Brindley H. Moore.

FINAL EXAMINATION IN MEDICINE.

Part II., Midwifery.—James P. S. Dunn, Charles W. Laird, David J. Miller, David G. Madill, Arthur H. Laird, Alexander K. Cosgrave, James F. Clarke, Norman P. Jewell, Edward J. H. Garstin, Richard J. Attridge, Frederick R. Sayers, John C. Baker, William H. L. M'Carthy, and Alexander S. M. Winder.

PRELIMINARY SCIENTIFIC EXAMINATION.

Physics and Chemistry.—Robert G. Ball, Elias H. Hughes, Antonie C. Redelinghuys, and Robert A. G. Elliott.

Botany and Zoology.—Ralph J. R. Mecredy, Francis Healy, George B. Hadden, Geoffrey A. Hoffman, Francis V. Agnew, Edgar Ll. F. Nash, and Robert Tivy.

PREVIOUS DENTAL EXAMINATION.

Materia Medica.—George Elliott.
Anatomy and Institutes of Medicine.—Arthur A. Smith.
Physics and Chemistry.—Maurice Horan.

MEDICAL MAGISTRATES.—The names of Mr. Eleazar Davies, L.R.C.P., L.R.C.S. Edin., of Fochriw, and of Mr. Ivor Henry Davies, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., have been placed on the commission of the peace for the county of Glamorgan.

MEDICAL INSPECTION OF SCHOOL CHILDREN.—At a meeting of the Exeter city council held on March 25th it was decided to appoint for the inspection of the school children a medical officer who should devote his whole time to the duties, the salary to be £250 per annum, increasing to £300. A proposal that three local medical men should be appointed at a salary of £60 per annum each was defeated.

LONGEVITY.—Mrs. M. Honychurch of Anerley, London, has recently celebrated the hundredth anniversary of her birthday. She was born in Bristol on March 7th, 1808, and her birth is entered in the register at St. Thomas's Church in that city.—It is announced that Mr. Jeremiah Simmons of 25, Roundhill-crescent, Brighton, attained his hundredth year on March 21st. The Rev. J. P. Bacon-Phillips of Crowhurst Rectory, Sussex, has given some details of his life in a letter to the *Times* of March 18th. Mr. Simmons, who has been a gardener, was born at Lewes and was baptised at Fletching.—Mrs. Jane Howes Smith of Walsall, who was born on March 29th, 1806, died on March 16th. The *Times* of March 23rd mentions that she was the mother of the Rev. F. Smith, the present rector of Church Lench, Evesham.

LITERARY INTELLIGENCE.—The editors of the *Journal of Hygiene* have announced the publication of a supplementary journal under the title of *Parasitology*, which will be issued at intervals determined by the material received by the editors and which will form a volume of from 400 to 500 pages with plates and figures, to be issued annually. This step has been necessitated by the remarkable development of parasitology in recent years and the journal will provide a means for the publication of papers relating to all pathogenic and disease-producing parasites. The first number will contain a paper by Dr. K. Jordan and the Hon. N. C. Rothschild, entitled "Revision of the Non-combed Eyed Siphonaptera." The editors of the journal will be Professor G. H. F. Nuttall, F.R.S., and Professor A. E. Shipley, F.R.S. Papers for publication should be sent to the former at 3, Cranmer-road, Cambridge; other communications to the University Press, Cambridge. The subscription will be £1 1*s.* per volume, or 15*s.* to subscribers to the *Journal of Hygiene*.

LEICESTER INFIRMARY.—The 135th annual report of the Leicester Infirmary shows that there has been a pressure on its beds during 1907 which it is hoped has been relieved materially by the opening of the new wing in November last. The report states—

> With 171 beds available during the year, the daily number of beds occupied has been 176·5, figures which will more than all else show to what straits the honorary medical staff were put to provide for really serious cases. The number of patients passing through each bed was 18, a record which no hospital in the kingdom would wish to emulate.

In all 3014 patients have been admitted. The average cost per occupied bed was £75 5*s.* 4*d.*, the average cost per patient £4 8*s.* 2*d.*, and the average cost per patient per week £1 9*s.* 9*d.* The out-patients' department has dealt with 10,947 new patients and 29,076 old patients, making a total of 40,023 attendances. The system of inquiry into the means of applicants has been continued throughout the year and several cases have, on financial grounds, been deemed unsuitable for treatment. In the casualty department 13,619 new cases have received treatment, and the total number of attendances has been 46,697. In several cases patients who admittedly only attended for prompt treatment or were taken to the infirmary as the most accessible place for treatment were referred for subsequent care to their medical advisers. The ordinary income for the year was £16,776 and the extraordinary income £2070, a total income of £18,846. The expenditure was £16,172.

DONATIONS AND BEQUESTS.—Mr. George Prentiss Shepherd of Keymer, Sussex, a former resident of Guildford, has offered £10,000 to build and endow a convalescent home in connexion with the Royal Surrey County Hospital.—By the will of Mr. John Waite the following hospitals will each receive £500—viz., the Hospital for Women, Shaw-street, Liverpool; the Royal Infirmary, Liverpool; the Northern Hospital, Liverpool; the Southern Hospital, Liverpool; the Consumption Hospital, Liverpool; the Children's Infirmary, Liverpool; and the Eye and Ear Infirmary, Liverpool.

BRITISH LYING-IN HOSPITAL.—The annual general meeting of the supporters of the British Lying-in Hospital, Endell-street, London, W.C., was held on March 24th, Mr. C. E. Farmer, chairman of the hospital, presiding. In moving the adoption of the report the chairman said that the in-patients had amounted to no less than 602, an increase of 87 on 1906 and far and away the largest number ever cared for in the hospital in one year. The number of out-patients had also increased from 802 to 928. Two deaths only had occurred in the hospital during the year. He added that the hospital had had the misfortune to lose during the year the services of the matron and the assistant matron, Miss Knott and Miss Sanderson, but that their successors were giving every satisfaction. The appointment of a resident medical officer had also proved a useful innovation. The income and expenditure account showed that the hospital was worked at a loss of over £500, though the deficit was made good by the receipts of a bazaar.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of this society was held at 6, Catherine-street, Strand, London, W.C., on March 20th. There were present Dr. F. de Havilland-Hall (in the chair), Mr. J. Brindley James, Mr. F. S. Edwards, Mr. W. Thomas (Birmingham), Dr. F. J. Allan, Dr. M. Greenwood, Dr. J. W. Hunt, Mr. J. F. Colyer, Dr. F. S. Palmer, Dr. W. Knowsley Sibley, Dr. St. Clair B. Shadwell, and Dr. J. B. Ball. The committee examined a long list of sickness claims, the majority of which have been caused by the epidemic of influenza. These claims are, for the most part, of short duration, and as there is reason to hope that the epidemic is subsiding the amount disbursed in sickness pay will have no appreciable effect on the ample reserves of the society. The number of new members joining is very satisfactory; the new entrants of this year exceed the number obtained in any previous two months of the society's working. Prospectuses and all further particulars can be obtained on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery-lane, W.C.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following is the list of prizes awarded for the winter session, 1907–08:—Descriptive anatomy: Junior: J. Prendiville, first prize (£2) and medal; and A. G. Mosbery, second prize (£1) and certificate. Senior: J. T. Duncan, first prize (£2) and medal; and P. J. Wigoder, second prize (£1) and certificate. Practical anatomy: First year: V. J. White, first prize (£2) and medal; and I. M. Swanepoel, second prize (£1) and certificate. Second year: T. M. Thomson, first prize (£2) and medal; and F. W. Warren, second prize (£1) and certificate. Practice of medicine: R. Adams, first prize (£2) and medal; and J. Meuton and Miss C. F. Williamson (equal), second prize (£1) and certificate. Surgery: R. Adams, first prize (£2) and medal; and G. C. Sneyd, second prize (£1) and certificate. Midwifery: J. Meuton, first prize (£2) and medal; and Miss I. M. Clarke and Miss C. F. Williamson (equal), second prize (£1) and certificate. Physiology: J. T. Duncan, first prize (£2) and medal; and F. W. Warren, second prize (£1) and certificate. Chemistry: T. P. Roberts, first prize (£2) and medal; and M. J. Hillery, second prize (£1) and certificate. Pathology: J. S. Pegum, first prize (£2) and medal; and H. R. Tighe, second prize (£1) and certificate. Physics: M. J. Hillery, first prize (£2) and medal; and T. D. Condell, second prize (£1) and certificate. The summer session commenced on April 1st, with the following lectures and practical courses:

operative surgery, practical chemistry, public health and forensic medicine, materia medica, histology, biology, and dissections.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Mr. Winfrey's Pharmacy Bill.

THIS Bill has been printed. In a memorandum explaining its objects it is stated that it differs from the measure introduced last session by Mr. WINFREY in that the cumbersome expedient of the registration of shops has been superseded. The clause requiring a company to have a qualified chemist as one of the directors has also been omitted. The objects of this Bill are to check (*a*) the evils arising from unqualified management of shops in which medicines are dispensed and poisons are retailed; and (*b*) the assumption of the statutory title of "chemist" by unregistered persons. The Bill would insure that in every place where poisons are retailed there shall be a qualified person in *bonâ-fide* control, and his name shall be exhibited to the public whether the owner of the business happens to be a natural person or a corporate body. The measure further seeks to enforce the intention of the Pharmacy Acts of 1852 and 1868 by prohibiting the use of the title of qualification by any person or combination of persons other than the actual living holders of the diploma of qualification. The Bill substitutes for the existing list of poisons another schedule of substances of a dangerous nature in the sale of which the public requires to be protected. A clause is also added permitting the establishment of reciprocal relations with the colonies in the acceptance of certificates of pharmaceutical qualification.

Housing and Town Planning Legislation.

Mr. BURNS, the President of the Local Government Board, has introduced into the House of Commons a Bill "to amend the law relating to the housing of the working classes, to provide for the making of town planning schemes, and to make further provision with respect to the appointment and duties of county medical officers of health." It has been read a first time. The Bill proposes great facilities for acquiring lands on the part of local authorities and for taking advantage of the Housing Acts. The procedure for making closing and demolition orders is amended. A town-planning scheme may be made with the authorisation of the Local Government Board by a local authority "as respects any land which appears likely to be used for building purposes with the general object of securing proper sanitary conditions, amenity, and convenience in connexion with the laying out and use of the land." Elaborate conditions with regard to this provision are embodied in the Bill. A clause in the Bill relates to county medical officers. It runs thus: "(1) Every county council shall appoint a medical officer of health under Section 17 of the Local Government Act, 1888; (2) the Local Government Board may by order prescribe the duties of medical officers of health appointed by a county council under Section 17 of the Local Government Act, 1888, whether before or after the passing of this Act; (3) the power of county councils and district councils under the said section to make arrangements with respect to medical officers of health shall cease without prejudice to any arrangement made previously to the date of the passing of this Act." Another clause makes it the duty of the clerk and the medical officers of health of a district council to furnish information to the medical officer of health of the county council. The question of the tenure of medical officers of health of their appointments will lead to debate.

Infant Life Protection.

The Select Committee of the House of Commons presided over by Mr. JOHN ELLIS has recommended in its report that the inspection provided under the Infant Life Protection Act of 1897 should be extended to homes in which not more than one infant is kept in consideration of periodical payment, and also that the age of inspected children should be raised to seven years. The illustrative cases which were given of carelessness, neglect, bad treatment, and cruelty in "one-child homes" have induced the committee to make these recommendations. However, the members of the committee have, to some extent at least, recognised some of the objections urged against the extension of the Act as deserving of serious consideration. It was stated by one category of witnesses that the inspection of "one-child homes" would arouse great repugnance on the part of those who provide the best kind of homes to continue to take in children and that the difficulty of finding such homes would therefore become very great. The members of the committee place on record their belief that there are a large number of these one-child cases where the infant is received from motives of a real affection for children in general or for some child, or parent, in particular. Where this element of a home atmosphere exists it is of vital importance that nothing should be done by Act of Parliament, or what would flow therefrom, to chill or to impair it. On a careful review of this aspect of the case, they come to the conclusion that some power should be given to the local authority to exempt, on such terms and conditions as it may think fit, any particular home in its district from inspection, or to make arrangements for any such inspection to be made by a properly constituted benevolent society if the local authority is satisfied that the interest of the child will be safeguarded. Another recommendation of the committee is to the effect that the inspection under the Infant Life Protection Act, especially if extended in the manner which the report suggests, should as far as possible be deprived of any rigid or formal official character, and should certainly be carried out by women possessing special qualifications for the work. When the committee was appointed it was intended that its recommendations should guide Parliament in shaping the clauses of the Children's Bill relating to infant life protection.

Public Health Bill.

Mr. COOPER'S Bill to amend the Public Health Act, 1875, and the Local Government Act, 1888, has been published. A memorandum is attached to it to explain its provisions. It states that "the object of the Bill is to make the council of an administrative county as defined by the Local Government Act, 1888, the predominant sanitary authority of such county and to give it power to supersede any local authority in the county which may neglect or refuse to carry out any of its statutory duties. It is proposed to require every county council to appoint at least one whole-time medical officer of health holding a diploma of public health. Every medical officer of health of a local authority appointed after the Bill comes into operation must hold a diploma of public health. Every local authority will be empowered to appoint as many sanitary inspectors as may be necessary to efficiently inspect its area, and such authorities will be empowered to appoint health visitors. The appointment by a local authority of a medical officer of health or sanitary inspector or health visitor will be subject to the approval of the county council, and every such officer on dismissal may appeal to the county council who may reinstate such officer if they think fit."

University Bill for Ireland.

Mr. BIRRELL'S University Bill for Ireland, which was introduced on Tuesday, March 31st, has been received very favourably.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 25TH.

The Medical Officer for the Witwatersrand Mines.

Mr. STAVELEY-HILL asked the Under Secretary of State for the Colonies whether the post of district medical officer for the Witwatersrand mines had yet been filled; and, if not, whether he would suggest to the Transvaal Government the urgent importance of filling the vacancy with a highly qualified man in view of the heavy mortality among the natives working in the mines.—Mr. CHURCHILL replied: I regret that I cannot add anything to my previous replies to questions on this subject.

THURSDAY, MARCH 26TH.

Tuberculosis in the Army.

Colonel LOCKWOOD asked the Secretary of State for War what steps (if any) were, or would be, taken to carry out the recommendations of the special War Office committee with regard to soldiers suffering from tuberculosis and making provision for their reception into suitable sanatoriums and thus preventing the spread amongst the civilian population in their own homes of a disease which was killing off some 40,000 of our population annually.—Mr. HALDANE replied: Will the honourable and gallant Member kindly refer to my replies to previous questions put to me on this subject by the honourable Member for Sunderland on Feb. 18th and the honourable Member for the Abercrombie Division of Liverpool on March 2nd, to which I have nothing to add?

The Importation of Foreign Meat.

Answering Mr. BOLAND,

Dr. MACNAMARA (Parliamentary Secretary to the Local Government Board) said: I do not think that any special action is necessary at the present time as regards the importation of bacon and meat from Denmark, but I have in preparation regulations dealing generally with the measures to be taken for the prevention of danger to health from the importation of foreign meat.

The Prevalence of Scarlet Fever.

Mr. REMNANT asked the President of the Local Government Board what action he proposed to take relative to the resolution unanimously passed by the managers of the Metropolitan Asylum District on Dec. 7th, 1907, and supported by the corporation of the City of London and generally by the borough councils and boards of guardians of the metropolis, asking the Local Government Board, in view of the continued prevalence of scarlet fever, notwithstanding the extensive isolation accommodation which had been provided, to cause an inquiry to be instituted into the cause of the disease; and whether any, and, if so, what, further means could be adopted for its prevention.—Dr. MACNAMARA (on behalf of Mr. BURNS) answered: I have received the resolution referred to which has been supported by various borough councils and boards of guardians. I am giving consideration to the subject but have not yet arrived at a decision with regard to it.

The Medical Needs of St. Helena.

Major ANSTRUTHER-GRAY asked the Under Secretary of State for the Colonies whether, in view of the fact that the inhabitants of St Helena, numbering about 5000, had only one medical man to attend to their needs, he would consider the advisability of appointing an assistant colonial surgeon.—Mr. CHURCHILL answered: The number of inhabitants of St. Helena at the last census in May, 1901, was 3342, not 5000, and there is reason to believe that the number has been reduced since that date. The question of appointing an assistant colonial surgeon has been considered on several occasions but it has not been found advisable to do so. There is an efficient hospital with a staff of trained nurses to supplement the services of the colonial surgeon.

Disease in the Transvaal Mines.

Mr. MACKARNESS asked the Under Secretary of State for the Colonies whether he could say how many Chinese labourers had been deported

to China, under Section 26 of the Transvaal Ordinance, 1904, on account of disease and physical infirmity; and how far the effect of this section had been taken into account in arriving at the comparative rates of mortality of the Chinese and Kaffirs working in the gold mines.—Mr. CHURCHILL said in reply: I understand that the total number of Chinese repatriated up to date as physically unfit is 4783. The figures of mortality show only deaths on the Rand, and deaths either of Chinese or Kaffirs who have left the Rand are not included.

Sanitary Administration in Seaside Resorts.

Mr. COURTHOPE asked the President of the Local Government Board whether, in the case of the sanitary authorities of popular seaside and health resorts who have applied for orders under the Public Health Act, 1907, he would issue such orders without delay, in order that the sanitary authorities in question might secure the advantages of the Act before the summer season commenced.—Mr. BURNS (by written answer) replied: I am desirous that the several cases should be dealt with as early as practicable and I will bear in mind the point to which the honourable Member refers; but the preliminary investigations necessary in each individual case, as well as the statutory requirements which have to be complied with, make it impossible to issue the orders with great rapidity.

MONDAY, MARCH 30TH.

Anthrax and Glanders in Human Beings.

Mr. LAURENCE HARDY asked the President of the Local Government Board whether his attention had been called to the report of the inquest on James Shaw in the City Coroner's Court on Feb. 8th; and whether he would take steps to extend the provisions with regard to the compulsory notification of disease to all cases of anthrax in human beings arising from any cause and to all case of glanders in human beings, or of suspected glanders.—Mr. BURNS answered: My attention has been called to the report of the inquest referred to. It is competent for a sanitary authority, with the consent of the Local Government Board, to make cases of anthrax and glanders in man compulsorily notifiable in their district. I may, however, state that glanders is a rare disease as regards human beings. Cases of anthrax in man chiefly occur in factories and workshops, and as regards these cases arrangements are made by the Secretary of State for information of them being given to the local medical officer of health.

The Notification of Births Act.

Mr. ALDEN asked the President of the Local Government Board whether he could state the number of county boroughs, urban district councils, and other local authorities which had adopted the Notification of Births Act; and whether he could make any statement as to the measures that had already been taken by the large industrial centres of population.—Mr. BURNS answered: The Act has been adopted by 132 local authorities. In most of the districts in which it has been adopted there is one or more female health visitors, whose duty it is in appropriate cases to visit and advise the mothers of newly born infants, and in some instances the local authority avails itself of the coöperation of local voluntary associations. In all cases the health visitors act under the supervision of the medical officer of health.

TUESDAY, MARCH 31ST.

A Case of Anthrax.

Mr. JOWETT asked the Secretary of State for the Home Department whether his attention had been called to the death, on March 8th, of a man named Michael Quigley of Bradford from anthrax, contracted whilst handling dirty cheap foreign wool for Messrs. Campbell and Harrison, woolcombers, of Shipley; if he was aware that the wool in its dusty state was thrown down to Quigley from the room above through a trap-door; and what steps he was taking to protect working people whose anxiety to earn a livelihood forced them to work under such dangerous conditions.—Mr. GLADSTONE replied: I have received a report of this case, from which it appears that the wool after opening was sent down a shoot for blending purposes in the room below, but that the whole of it had been opened over a fan in order to remove dust and dirt, and that in order still further to reduce the risk from dust the shoot is provided with swing-doors half way down which break the fall of the material. I am informed that the regulations are fully observed at the factory and that the firm are voluntarily observing additional precautions, including the provision of respirators, the opening of all material over the opening boards, and the washing of all material in a disinfectant liquid. I am causing further inquiry to be made as to whether any additional measures can be taken to reduce the danger at the blending heap.

Opium and Fever in India.

Mr. REES asked the Secretary of State for India whether, in view of the fact that the mortality from fever in India was so greatly in excess of that occasioned by other diseases, and of the fact that opium was a recognised specific, and an absolute necessity to certain races and tribes of Indians, for the treatment of this disease, he would in arrangements that were made for reducing the cultivation of opium, safeguard the supply of sufficient quantities for use for medicinal purposes.—Mr. MORLEY replied (by written answer): I have no doubt that in any further regulations which the Government of India may make for the restriction of the opium habit in India the special circumstances of particular tribes or races, necessitating a supply of the drug for medicinal purposes, will receive due consideration.

The Administration of Anæsthetics.

Mr. BRAMSDON asked the Secretary of State for the Home Department to state how many deaths occurred during the year 1907 in the metropolitan area and in the other parts of England and Wales respectively from the effects of the administration of anæsthetics.—Mr. GLADSTONE replied (in a written answer): The figures for the year 1907 are not yet available. According to the verdicts of coroners' juries and the certificates of medical practitioners, there were in the year 1906 64 deaths in London and 119 in the remainder of England and Wales caused by anæsthetics administered for operations. There appears to be some reason to doubt whether the certificates on which these returns are based are in all cases complete, and there must necessarily sometimes be difficulty in determining if death under an anæsthetic is caused by the anæsthetic. I propose therefore to make further inquiry into the matter.

BOOKS, ETC., RECEIVED.

AMBROSE COMPANY, LIMITED, THE, 57, Wigmore-street, Cavendish-square, London, W.

Insanity: Its Causes and Prevention. A Popular Treatise. By Charles Williams, L.R.C.P., L.R.C.S., L.S.A. Price 2*s.* 6*d.* net.

ARNOLD, EDWARD, 41 and 43, Maddox-street, London, W.

The Influence of Alcohol and Other Drugs on Fatigue. The Croonian Lectures Delivered at the Royal College of Physicians in 1906. By W. H. R. Rivers, M.D., F.R.C.P., Fellow of St. John's College, Cambridge. Price 6*s.* net.

BAILLIÈRE, TINDALL, AND COX, London, W.C.

The Diagnosis and Treatment of Pulmonary Tuberculosis. By Francis M. Pottenger, A.M., M.D., Monrovia, California, Medical Director of the Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, Cal., Professor of Clinical Medicine, Medical Department, University of Southern California; Chief of Medical Staff of the Helping Station of the Southern California Anti-Tuberculosis League, Los Angeles, Cal. Price 15*s.* net.

BLACKWOOD, WILLIAM, AND SONS, Edinburgh and London.

Garcia the Centenarian and His Times. Being a Memoir of Manuel Garcia's Life and Labours for the Advancement of Music and Science. By M. Sterling Mackinlay, M.A. Oxon., Author of "Antoinette Sterling and Other Celebrities." Price 15*s.* net.

DUNOD, H., ET PINAT, E., 49, Quai des Grands-Augustins, Paris.

Le Catalogue International des Principales Publications Périodiques du Monde. Par le Prof. Emile Guarini, Professeur à l'École d'Arts et Métiers de Lima, Pérou. Price Fr.3.

ENGADIN PRESS CO. (FORM. SIMON TANNER), Samaden.

Über die Klinische Bedeutung der Opsonine. Inaugural-Dissertation zur Erlangung der Doktorwürde vorgelegt der hohen Medizinischen Fakultät der Universität Bern. Von Egbert Coleby Morland, M.B., B.Sc. Lond. Price not stated.

FISCHER, GUSTAV, Jena.

Die Funktionen der Nervencentra. Von Dr. W. v. Bechterew, O. Akademiker, Direktor der Psychiatrischen und Nervenklinik der Medizinischen Akademie, Präsident des Psychoneurologischen Institutes in St. Petersburg. Deutsche Ausgabe, in Verbindung mit dem Verfasser redigiert durch Dr. Richard Weinberg, Professor der Anatomie in St. Petersburg. Erstes Heft: Einleitung, Untersuchungsmethoden, Rückenmark und Verlängertes Mark. Price M.16; geb., M.17.50.

Nerven und Seele. Von Dr. Paul Kronthal. Price M.10.

HIRSCHWALD, AUGUST, Unter den Linden, 68, Berlin, N.W.

Von Bergmann und Rochs' Anleitende Vorlesungen für den Operations-Kursus an der Leiche. Bearbeitet von Dr. A. Bier, ord. Professor, Geh. Med.-Rat und Generalarzt à la suite des Marine-Sanitätskorps, und Dr. H. Rochs, Generalarzt und Sanitäts-Inspekteur. Fünfte Auflage. Price M.8.

HODGE, WILLIAM, AND CO., 34-36, North Frederick-street, Glasgow; and Edinburgh.

How to Nurse the Patient. Edited by J. Cowan Wilson, M.B., C.M. Glasg., D.P.H. Camb., late Assistant House Surgeon and House Physician, Greenock Infirmary and Fever Hospital; Fellow of the Royal Institute of Public Health, and Member of the Incorporated Society of Medical Officers of Health, London. Price 3*s.* 6*d.* net.

HODGE, WILLIAM, AND CO., Glasgow and Edinburgh. (SWEET AND MAXWELL, LIMITED, London.)

Trial of A. J. Monson. Edited by John W. Moore, B.A. Oxon., Advocate. Price 5*s.* net. (Notable Scottish Trials Series.)

HOGG, JOHN, 13, Paternoster-row, London.

Knaves or Fools? By Charles E. Wheeler, M.D., B.S., B.Sc. Price 2*s.* 6*d.* net.

KARGER, S., Karlstrasse, 15, Berlin. (WILLIAMS AND NORGATE, 14, Henrietta-street, Covent-garden, London, W.C.)

Vorlesungen über Diätbehandlung innerer Krankheiten vor reiferen Studierenden und Aerzten. Von Professor Dr. H. Strauss, in Berlin. Mit einem Anhang "Winke für die diätetische Küche." Von Elise Hannemann. Price M. 7.80; geb., M. 9.

KLINKHARDT, DR. WERNER (Verlag von), Leipzig.

Hermaphroditismus beim Menschen. Von Franz Ludwig von Neugebauer, Vorstand der Gynækologischen Abteilung des Evangelischen Hospitals in Warschau. Price M.40; geb., M.43.

LEHMANN, J. F., Heustrasse, 20, München.

Lehmann's Medizinische Atlanten. Band VI. Atlas Chirurgisch-pathologischer Röntgenbilder. Von Privatdozent Dr. Rudolf Grashey, Assistenzarzt der k. chirurgischen Klinik zu München. Price M.22.

LONGMANS, GREEN, AND CO., 39, Paternoster-row, London, E.C.

A Mind that Found Itself. An Autobiography. By Clifford Whittingham Beers. Price 7*s.* 6*d.* net.

MACMILLAN AND CO., LIMITED, St. Martin's-street, London.

An Elementary Course of Practical Zoology. By the late T. Jeffery Parker, D.Sc., F.R.S., Professor of Biology in the University of Otago, Dunedin, New Zealand, and W. N. Parker, Ph.D., Professor of Zoology at the University College of South Wales and Monmouthshire, in the University of Wales. Second edition. Price 10*s.* 6*d.*

MACMILLAN COMPANY, THE, New York. (MACMILLAN AND CO., LIMITED, London.)

Biological Studies and Addresses. Vol. I., Evolution of Mammalian Molar Teeth to and from the Triangular Type, including Collected and Revised Researches on Trituberculy and New Sections on the Forms and Homologies of the Molar Teeth in the Different Orders of Mammals. By Henry Fairfield Osborn, Sc.D., LL.D., D.Sc., Dacosta Professor of Zoology in Columbia University; Curator of Vertebrate Palæontology in the American Museum of Natural History. Edited by W. K. Gregory, M.A., Lecturer in Zoology in Columbia University. Price 8s. 6d. net.

The Animal Behaviour Series. Volume II., The Animal Mind. A Text-book of Comparative Psychology. By Margaret Floy Washburn. Ph.D., Associate Professor of Philosophy in Vassar College. Price 7s. net.

RENSHAW, HENRY, 356, Strand, London.

A Manual of the Practice and Theory of Medicine. By Sir William Whitla, M.A., M.D., LL.D., Senior Physician to and Lecturer on Clinical Medicine, Royal Victoria Hospital; Professor of Materia Medica and Therapeutics in Queen's College, Belfast. In two Volumes. Price not stated.

RICHARDS, GRANT, 7, Carlton-street, London.

The Birds of the British Islands. By Charles Stonham, C.M.G., F.R.C.S., F.Z.S. With Illustrations by Lilian M. Medland. In Twenty Parts. Part IX. Price 7s. 6d. net.

SANDS AND CO., London and Edinburgh. (HERDER, B., 17, South Broadway, St. Louis, Missouri, U.S.A.)

Expository Essays in Christian Philosophy. Edited by the Rev. Francis Aveling, D.D. What is Life? A Study of Vitalism and Neo-Vitalism. By Bertram C. A. Windle, M.A., M.D., Sc.D., LL.D., F.R.S., F.S.A., President of Queen's College, Cork. Price 3s. 6d. net.

SPOTTISWOODE AND CO., LIMITED, New Street-square, London, E.C.

The Medical Register: printed and published under the Direction of the General Council of Medical Education and Registration of the United Kingdom, pursuant to an Act passed in the Year XXI. and XXII. Victoriæ, Cap. XC., entitled An Act to Regulate the Qualifications of Practitioners in Medicine and Surgery. 1908. Price 10s. 6d.

The Dentists Register: printed and published under the Direction of the General Council of Medical Education and Registration of the United Kingdom, pursuant to an Act passed in the Year XLI. and XLII. Victoriæ, Cap. XXXIII., entitled An Act to Amend the Law relating to Dental Practitioners. 1908. Price 3s. 4d.

WRIGHT, JOHN, AND CO., Bristol. (SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.)

The Medical Annual: A Year-book of Treatment and Practitioner's Index. 1908. Twenty-sixth year. Price 8s. 6d. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ANDERTON, E. W., M.B., B.S. Vict., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Hawes District of the county of York.

BARBIS, J. D., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Medical Officer at the City of London Lying-in Hospital.

COOPER, H. G., M.B., B.C. Cantab., has been appointed Public Vaccinator for the Altrincham District of Cheshire.

ELDER, ELIZABETH F., M.B., Ch.B. St. And., has been appointed Assistant Medical Inspector of School Children by the Cardiff Education Committee.

FEDDEN, W. FEDDE, M.S., M.B. Lond., F.R.C.S. Eng., has been appointed Surgeon to Out-patients at the Kentish Town Department of the Hampstead General and North-West London Hospitals.

HAWTHORNE, C. O., M.D. Glasg., M.R.C.P. Lond., has been appointed Physician to Out-patients at the Kentish Town Department of the Hampstead General and North-West London Hospitals.

HERAPATH, CHARLES EDWARD KYNASTON, L.R.C.P. Lond., M.R.C.S., has been appointed Junior House Surgeon at the Bristol Royal Infirmary.

KEMP, CHARLES GORDON, M.B., B.S. Durh., L.R.C.P. Lond., M.R.C.S., has been appointed Resident Casualty Officer at the Bristol Royal Infirmary.

O'KEEFFE, MARTIN, L.R.C.P. Irel., L.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ovoca District of the county of Wicklow.

PARKER, WILLIAM GIBSON, M.B. Lond., D.P.H. Cantab., has been appointed Assistant Medical Inspector of Schools by the Somerset Education Committee.

PIRIE, W. RATTRAY, M.B., C.M. Aberd., has been appointed Assistant Physician at the Aberdeen Royal Infirmary.

PRICE, F. W., M.B., C.M. Edin., M.R.C.P. Lond., has been appointed Physician to Out-patients at the Kentish Town Department of the Hampstead General and North-West London Hospitals.

RIDOUT, C. A. SCOTT, M.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Royal Portsmouth Hospital.

RUNDLE, HENRY, F.R.C.S. Eng., has been appointed Consulting Surgeon to the Royal Portsmouth Hospital.

SAVEGE, JAMES, C.M., M.D. Aberd., has been appointed a District Medical Officer and Public Vaccinator to the Sculcoates (Hull) Board of Guardians.

SMITH, G. F. DARWALL, M.B., B.Ch. Oxon., F.R.C.S. Eng., has been appointed Physician to Out-patients at the British Lying-in Hospital, Endell-street, London.

THOMAS, EDMUND FAIRFIELD, L.R.C.P. Lond., M.R.C.S., L.S.A., has been appointed Assistant Medical Inspector of School Children by the Cardiff Education Committee.

TROUP, ARTHUR G., M.B., Ch.B., D.P.H. Aberd., has been appointed Assistant Pathologist at the Sussex County Hospital, Brighton.

WALKER, J. W. THOMSON, M.B., C.M. Edin., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Surgeon to Out-patients at the Kentish Town Department of the Hampstead General and North-West London Hospitals.

WHITEHEAD, A. R., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Bridlington District of the county of York.

WRIGHT, ANDREW J. M., M.B., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Resident Obstetric Officer at the Bristol Royal Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

AYR DISTRICT ASYLUM.—Junior Assistant Medical Officer. Salary £120 per annum, with board, lodging, and laundry.

BIRMINGHAM INFIRMARY.—Assistant Resident Medical Officer. Salary £104 per annum, with apartments, rations, &c.

BRISTOL ROYAL INFIRMARY.—House Physician. Salary £100 per annum, with apartments, board, and laundry.

CAMBRIDGE, BOROUGH OF.—Medical Officer of Health. Salary £500 per annum.

CAMBRIDGESHIRE, &C., ASYLUM, Fulbourn.—Second Assistant Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and attendance.

CANCER HOSPITAL (FREE), Fulham-road, London, S.W.—Honorary Physician. Also Dental Surgeon.

CARMARTHEN, JOINT COUNTIES LUNATIC ASYLUM.—Second Assistant Medical Officer. Salary £160 per annum, with board, lodging, washing, and attendance.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £70 per annum, with board and lodging.

CHESHIRE COUNTY COUNCIL EDUCATION COMMITTEE.—Two Assistants to the Medical Officer of Health. Salary in each case £350 per annum and travelling expenses.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Physician to Out-patients.

CUMBERLAND, COUNTY COUNCIL OF.—Medical Officer of Health. Salary £700 per annum.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—House Surgeon, also Assistant House Surgeon. Salaries £80 and £40 respectively, with board and lodging.

EDINBURGH DISTRICT ASYLUM, Bangour Village.—Second Assistant Physician, unmarried. Salary £120, with board, apartments, and laundry.

EGYPTIAN GOVERNMENT, KASR EL AINY HOSPITAL.—Resident Surgical Officer. Salary £250 per annum, with quarters, servants, washing, coal, and light.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge road, London, S.E.—House Surgeon for six months. Also House Physician for nine months.

EXETER, CITY AND COUNTY OF THE CITY OF.—School Medical Officer. Salary £250 per annum, rising to £300.

GLASGOW, ROYAL SAMARITAN HOSPITAL FOR WOMEN.—Visiting Surgeon.

HÔPITAL FRANÇAIS, 172, Shaftesbury-avenue, W.C.—Second Resident Medical Officer. Salary £50 per annum, with board and lodging. Also Third Physician to Out-patients.

HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale, W.—Resident Medical Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

INFANTS HOSPITAL, Vincent-square, Westminster.—Assistant Physician.

KETTERING AND DISTRICT GENERAL HOSPITAL.—Resident Medical Officer, unmarried. Salary £80 per annum, with board and residence, &c.

LANARK, MIDDLE WARD ISOLATION HOSPITAL.—Resident Physician. Salary £150 per annum, with board, &c.

LEEDS, HOSPITAL FOR WOMEN AND CHILDREN.—House Surgeon for six months. Salary at rate of £50 per annum, with board, &c.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.

LONDON FEVER HOSPITAL, Liverpool-road, N.—Assistant Resident Medical Officer. Salary £150 per annum, with residence and board.

LOWESTOFT HOSPITAL.—House Surgeon, unmarried, for six months. Salary at rate of £80 per annum, with board, lodging, and washing.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board, residence, and washing.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Senior House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing allowance.

MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES, Manchester.—Assistant Medical Officer. Salary £100 per annum.

MANCHESTER ROYAL INFIRMARY CONVALESCENT HOSPITAL, Cheadle.—Resident Medical Officer, unmarried. Salary £150, per annum, with board and residence.

MANCHESTER, UNIVERSITY OF.—Senior Demonstrator in Physiology. Salary £150, rising to £200 per annum.

NEWCASTLE-ON-TYNE, HOSPITAL FOR SICK CHILDREN.—Honorary Surgeon.

NORTHAMPTONSHIRE COUNTY COUNCIL EDUCATION COMMITTEE.—School Medical Officer. Salary £300 per annum and travelling expenses.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon, also Assistant House Physician. Salary in each case £80 per annum, with board, lodging, and washing.

PRESTON, LANCASHIRE EDUCATION COMMITTEE.—School Medical Superintendent. Salary £500 per annum, rising to £650, with expenses.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, London, W.—House Surgeon and House Physician; also Junior House Surgeon and Junior House Physician. All for six months. Salary of two former at rate of £75 per annum, and of two latter at rate of £40 per annum, with board, residence, and laundry.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with rooms, commons, and washing.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Resident House Physician and Resident House Surgeon. Board, &c., provided.

ROYAL NAVY, MEDICAL DEPARTMENT.—Examination for not less than 15 Commissions.

SALFORD ROYAL HOSPITAL.—Honorary Surgeon for the Pendleton Branch Dispensary.

SHEFFIELD EDUCATION COMMITTEE.—Assistant Medical Officer. Salary £250 per annum, rising to £300.

SHREWSBURY, SALOP INFIRMARY.—House Surgeon. Salary £100 per annum, with board, washing, and residence.

SINGAPORE, STRAITS SETTLEMENTS, MUNICIPAL HEALTH DEPARTMENT.—Assistant Municipal Health Officer, unmarried. Salary $4200, rising to $4800.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Honorary Assistant Physician.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon, unmarried, for six months, renewable. Salary at rate of £70 per annum, with residence, board, and washing.

SOUTH UIST (Southern Division).—Medical Officer. Salary £77 10s.

STIRLING DISTRICT ASYLUM, near Larbert.—Medical Superintendent. Salary £700 per annum, with house, &c.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary £40 per annum, with board, washing, and residence.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—House Physician. Salary £100 per annum, with apartments, board, and washing.

TAUNTON AND SOMERSET HOSPITAL, Taunton.—Resident Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and laundry.

TOXTETH PARK WORKHOUSE AND INFIRMARY.—Assistant Resident Medical Officer. Salary £100 per annum, with board, washing, and apartments.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea.—House Surgeon for six months. Salary £30, with board, lodging, and laundry.

WALSALL, EDUCATION COMMITTEE FOR THE COUNTY BOROUGH.—School Medical Officer. Salary £200 per annum.

WARRINGTON, COUNTY BOROUGH OF.—Assistant Medical Officer of Health. Salary £125 per annum, with board and residence.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, PARALYSIS, AND EPILEPSY, 73, Welbeck-street, W.—Honorary Registrar and Pathologist.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

WORCESTER GENERAL INFIRMARY.—House Surgeon. Salary £80 per annum, with board, residence, and washing.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £120 a year, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Manchester (East), in the county of Lancaster.

Births, Marriages, and Deaths.

BIRTHS.

BEST.—On March 30th, at Ilford, Essex, the wife of W. Harris Best L.R.C.P. Lond., of a son.

BROWN.—On March 26th, at Bartholomew-road, N.W., the wife of Alexander Brown, M.B. Lond., M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

GREGORY.—On March 31st, at Apiti, New Zealand, the wife of Charles H. Gregory, M.A., M.B., B.C., M.R.C.S., L.R.C.P., of a daughter.

MENZIES.—On March 27th, at the County Asylum, Cheddleton, Staffordshire, the wife of William Francis Menzies, M.D., M.R.C.P., of a daughter.

WALKER.—On March 27th, at Oakfield-road, Clifton, Bristol, the wife of Cyril H. Walker, M.B., of twins (boy and girl).

MARRIAGES.

BEADNELL—SHELDON.—On March 28th, at St. Andrew's Church, Worthing, Captain Herbert Owen Marsh Beadnell, R.A.M.C., to Mabel, only daughter of John Sheldon, Esq., of Tilehurst, Reading.

THOMSON—FRIPP.—On March 28th, at St. George's, Hanover-square, J. Marshall Thomson, L.D.S. R.C.S. Edin., to Alice Edith, daughter of John Trude Fripp, L.D.S. R.C.S.

DEATH.

WOOD.—On March 13th, at Middleton, Driffield, East Yorkshire, William Wood, M.R.C.S. Eng., L.S.A. Lond.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE BONESETTER IN THE SEVENTEENTH CENTURY.

THE bonesetter is not an invention of to-day; he seems to have flourished at a time when there was no course of medical studies made imperative upon the medical man. A correspondent has pointed out to us that Sir John Bramston in his autobiography tells how his boy Anthony rode out setting with a dog at Skreens in Essex in 1687 and was thrown so that he put his right shoulder out of joint, when a bonesetter, one Mr. Strut of Chelmsford, "tryed it with a coole-staff," which put Anthony to extreme torture. It seems that the men who were holding the patient let go. Strut tried again with his foot but the kicks of Anthony injured the operator, and "after being four times tormented" Anthony's bone was still out. One Pesgrave of London was then accounted the best bonesetter of England, but to him a local man, Mr. Hastler of Bishop's Stortford, was preferred. "Can you doe it at once," said the poor boy, who, says our correspondent, preferred being a cripple for life to being so much tortured again. Hastler said, "Yea, or never." Anthony was laid on his back and what happened is thus described: "A towel was put under his arm-hole but upon a bolster, and round the neck of the operator: three men held the lad by his other arm and his legge, and all pulling hard at once Strut with his foot put the bone in its place, which gave a snap that all heard it;" ..... "for which God be praised," says Sir John Bramston.

LIFE INSURANCE COMPANIES MEDICAL FEES.

To the Editor of THE LANCET.

SIR,—I have felt for a long time that the various life insurance companies pay their medical examiners very inadequate fees. These companies are wealthy and their directors are handsomely paid, yet they expect a medical man to most carefully examine the life to be insured and in addition to make a very critical analysis for the absurd remuneration of 10*s.* 6*d.*, and if the person insures for a large sum then a guinea is paid. It is quite time the medical profession bestirred itself and refused to continue on these terms. A guinea is the lowest fee that ought to be offered, rising to 3 guineas according to the sum insured.

I am, Sir, yours faithfully,

Windsor, March 22nd, 1908. WILLIAM FAIRBANK.

*** A great many medical men refuse to take less than a guinea and we think their action very reasonable.—ED. L.

A MEDICAL WOMAN AS A SUFFRAGIST.

WHATEVER views may be held with regard to the desire of some women to obtain the suffrage it is difficult to sympathise with the tactics of the passive resister as exemplified by Miss O. M. S. Lewin, M.B., B.S., who recently refused to pay a guinea for a licence to use armorial bearings. Still, it was unkind of Mr. Plowden, in fining Miss Lewin £10, to say to her, "Consider your crest lowered"—joking against any individual who cannot joke back is to be deprecated. By the way, heraldic experts are probably rather amused at this case. Miss Lewin supplied evidence with regard to the possession of a crest so that it should be clear that she was breaking the law. As a matter of fact, a woman has no crest—armorial bearings seem to have been in question but what Miss Lewin pleaded guilty to using was "her crest." A woman in certain circumstances has an armorial coat but she has no crest. So the law is making Miss Lewin pay for the privilege of using what she has not got, except in the general sense that all armorial devices are taxable, and Miss Lewin, to make sure that it should be quite clear that she is a passive resister, supplies evidence to prove her possession of what she cannot have.

A BAD STARTER.

To the Editor of THE LANCET.

SIR,—A lad of 18, of steady habits and of good general knowledge, with a public school education, has been up three times at the College of Preceptors for the entrance medical examination. He gets excellent marks for classics, history, and geography, but fails each time in mathematics. For this subject he has no capacity. Can you advise me in the matter? Is there an examining body less exacting in this subject, or do you recommend the abandonment of the profession for a boy who cannot do geometry.

I am, Sir, yours faithfully,

March 30th, 1908. ANXIOUS GUARDIAN.

*** We should certainly encourage the lad to persist as he has been invariably successful in the other subjects. He has probably been taught mathematics badly and does not approach mathematical questions in any right method. We recommend a "coach." There is no way into the medical profession which does not require the acquisition of elementary mathematics, but the amount is small, and a properly taught lad should be able to master it easily if he shows intelligence in other directions.—ED. L.

BRAITHWAITE'S RETROSPECT.

To the Editor of THE LANCET.

SIR,—I have four volumes of "Braithwaite's Retrospect," July to December, 1850; January to June, 1851; July to December, 1851; January to June, 1853. They are almost perfect, many leaves being uncut. Can any of your readers tell me if these books are of any value?

I am, Sir, yours faithfully,

March 27th, 1908. A. B. C.

Consistency.—The warning notice does not, and is not intended to, constitute an injunction to our readers to boycott the appointment. The notice means, as we have explained previously, that intending applicants should make certain inquiries. There are some appointments which we do not allow to be advertised; there are others where, the apparent difficulty having been explained to us, we permit the advertisement to appear—usually in discharge of what we conceive to be a public duty; there is a third class where we think that intending applicants ought to hear of circumstances that may induce them not to apply. The appointment in question belongs to the third class. We wish in dealing with this difficult subject that it was as easy to act always, and regardless of circumstances, upon one plan as it is to assume the title of "Consistency." But we think our reader's criticism a very just one.

Higher Standard.—We have seen the paragraph in question and we agree with our correspondent that such publicity is unfortunate.

J. O. D.—We propose to publish in an early issue of THE LANCET a little summary of what is known on the subject.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

TUESDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (8th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

THURSDAY (9th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.)

FRIDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (11th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

PATHOLOGICAL SECTION (Hon. Secretaries—Leonard S. Dudgeon, O. Grünbaum) at the Laboratories of the National Hospital for the Paralysed and Epileptic, Queen-square, W.C.: at 8.30 P.M.

Meeting.

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—H. Beckett-Overy, W. J. Gow): at 7.45 P.M.

Specimens:

Dr. Herbert Spencer: An Ovarian Tumour with Adherent Intestine necessitating Enterectomy.

Mr. Alban Doran: A Specimen of Hæmatosalpinx which had caused Acute Symptoms, following Retroversion of the Fibroid Uterus.

Short Communications:

Dr. Macnaughton-Jones: A Case of Salpingo-ovaritis following Labour in a Patient previously operated upon for Tuberculous Pyosalpinx (with specimen).

Dr. Kedarnath Das: Three Cases of Cæsarean Hysterectomy for Atresia of the Vagina, Two of them Complicated with Irreparable Vesico-vaginal Fistulæ.

Dr. Nepean Longridge: On Creatinin Excretion in Lying-in Women.

Paper:

Dr. Herbert Williamson and Dr. Eardley Holland: A Case of Intra-Uterine Death of the Fœtus occurring in Six Consecutive Pregnancies, with Observations upon the Importance of the Examination of the Fœtal Tissues for the Presence of the Spirochæta Pallida.

FRIDAY.

At 4.45 P.M.:

GENERAL MEETING OF FELLOWS OF THE SOCIETY.

Ballot for New Fellows.

CLINICAL SECTION (Hon. Secretaries—A. E. Garrod, Raymond Johnson): at 8.30 P.M.

Cases:

Dr. L. Guthrie and Mr. M. S. Mayou: Right Hemiplegia with Optic Atrophy.

Mr. Charters Symonds: A Patient Three Years after Complete Extirpation of the Larynx, showing an Improved Method of Speaking.

Mr. W. S. Handley: Lymphangioplasty for the Brawny Arm of Cancer.

Dr. Francis Hawkins: Ascites Treated by Paracentesis performed 25 times in 15 Months, Patient well Seven Years Later.

Dr. F. Parkes Weber: Hæmangiectatic Hypertrophy of the Foot, possibly of Spinal Origin.

Mr. C. H. Fagge: Rupture of External Popliteal Nerve.

Dr. Norman Moore: Myxœdema with Optic Atrophy.

Dr. David Walsh: Pseudo-acromegaly.

Dr. J. Barnes Burt: Three Cases of Gout showing Destructive Changes in Bone.

Dr. F. Parkes Weber: Acute Œdema of Hands and Feet with Pulmonary Affection.

The Cases will be in attendance at 8 p.m.

Report of Committee:

On Dr. W. Essex Wynter's case of Methæmoglobinæmia.

Short Papers:

Dr. J. Graham Forbes and Dr. F. Langmead: Fatal Lymphocythæmia in Early Life.

Dr. Francis Hawkins: A Case of Multiple Rheumatic Nodules in an Adult.

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Millbank, S.W.

THURSDAY.—8.30 P.M., Capt. W. Salisbury-Sharpe, R.A.M.C.(V.): Diseases likely to occur on Mobilization of a Territorial Army.

INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH, 1, Upper Montague-Street, Russell-square, W.C.

FRIDAY.—7.30 P.M., Dr. F. E. Fremantle: The Garden City, Rural Housing, and the Government.

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

WEDNESDAY.—8.30 P.M., Annual Discussion on Rheumatism (opened by Dr. F. Taylor). Dr. Poynton and Dr. Horder will speak on the Bacteriological Aspects of Rheumatism and Mr. Luff on the Irregular Manifestations of Rheumatism and their Treatment.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Tichborne-street, Edgware-road, W.

THURSDAY.—8.30 P.M., Mr. L. B. Rawling: The Surgical Treatment of the Incompletely Descended Testis. Clinical Cases will also be shown.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN, 11, Chandos street, Cavendish-square, W.

FRIDAY.—5 P.M., Mr. H. Lett: Intussusception associated with Severe Purpura. Mr. J. P. Parkinson: Tetanus Neonatorum. Mr. G. Pernet, Mr. L. Guthrie, Dr. G. Carpenter, Mr. P. Parkinson, and others: Cases.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. G. Little: Clinique (Skin). 5.15 P.M. Lecture:—Dr. H. Walsham: The X Rays in the Diagnosis of Diseases of the Chest.

TUESDAY.—4 P.M., Dr. W. Carr: Clinique (Medical). 5.15 P.M., Lecture:—Dr. C. O. Hawthorne: The Clinical Anatomy and Physiology of the Nervous System.

WEDNESDAY.—4 P.M., Mr. J. Cantlie: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. C. O. Hawthorne: The Clinical Anatomy and Physiology of the Nervous System.

THURSDAY.—4 P.M., Mr. Hutchinson Clinique (Surgical). 5.15 P.M., Lecture:—Dr. G. Oliver (Harrogate): Recent Studies in Arterio-sclerosis.

FRIDAY.—4 P.M., Mr. R. E. Fickerton: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, road, W.

MONDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M., Operations.
TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin.
WEDNESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Dr. K. Scott: Diseases of the Eye. 2.30 P.M., Operations. Dr. D. Robinson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M., Operations.
FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin.
SATURDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Dr. K. Scott: Diseases of the Eye. 2.30 P.M., Operations. Dr. D. Robinson: Diseases of Women.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Cliniques:—10 A.M., Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Throat, Nose, and Ear (Mr. H. W. Carson); X Ray (Dr. A. H. Pirie). 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).
TUESDAY.—Clinique:—10.30 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Surgical Operations (Mr. Carson). Cliniques:—Surgical Out-patient (Mr. Edmunds); Gynæcological (Dr. A. E. Giles). 3 P.M., Demonstration on Fevers (at the North-Eastern Fever Hospital, St. Ann's-road, N.): Dr. F. Thomson.
WEDNESDAY.—Cliniques:—2.30 P.M., Medical Out-patient (Dr. Whipham); Dermatological (Dr. G. N. Meachen); Ophthalmological (Mr. R. P. Brooks). 3 P.M., Demonstration of Cases of Cancer of the Breast, Clinical and Pathological (at the Cancer Hospital, Brompton, S.W.): Mr. H. Evans.
THURSDAY.—2.30 P.M., Gynæcological Operations. (Dr. Giles). Cliniques:—Medical Out-patient (Dr. Whiting); Surgical Out-patient (Mr. Carson); X Ray (Dr. Pirie). 3 P.M., Medical In-patient (Dr. G. P. Chappel). Demonstration of Cases of Fever (at the North-Eastern Fever Hospital, St. Ann's-road, N.): Dr. F. Thomson. 4.30 P.M., Throat Operations (Mr. H. W. Carson).
FRIDAY.—10 A.M., Clinique:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Surgical Operations (Mr. Edmunds). Cliniques:—Medical Out-patient (Dr. Auld); Eye (Mr. Brooks). 3 P.M., Medical In-patient (Dr. M. Leslie).

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MONDAY.—2.15 P.M., Sir Dyce Duckworth: Medicine. 2.30 P.M., Operations. 3.15 P.M., Mr. W. Turner: Surgery. 4 P.M., Dr. St Clair Thomson: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
TUESDAY.—2.15 P.M., Dr. R. T. Hewlett: Medicine. 2.30 P.M., Operations. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
WEDNESDAY.—2.15 P.M., Dr. F. Taylor: Medicine. 2.30 P.M., Operations. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical, 11 A.M., Eye.
THURSDAY.—2.15 P.M., Dr. G. Rankin: Medicine. 2.30 P.M., Operations. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Mr. M. Davidson: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
FRIDAY.—2.15 P.M., Dr. R. Bradford: Medicine. 2.30 P.M., Operations. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—2.30 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 2nd, 1908.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Mar. 27	30·15	S.W.	...	82	53	42	43	44	Overcast
,, 28	29·93	N.W.	0·09	88	50	43	42	43	Raining
,, 29	30·14	W.	...	98	53	39	45	47	Fine
,, 30	29·97	W.	0·09	102	56	44	42	44	Fine
,, 31	29·67	W.	0·18	99	50	43	41	45	Cloudy
April 1	29·89	W.	...	97	52	39	41	44	Fine
,, 2	30·03	W.	...	76	57	44	49	50	Overcast

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